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Inquiry into London Transport

MR. ALAN LENNOX-BOYD, Minister of Transport, announced in the House of Commons on Tuesday that the Government had decided that an inquiry should be held into the undertaking of the London Transport Executive. A committee would be appointed for this purpose, whose terms would be: "To inquire into the conduct of the undertaking carried on by the London Transport Executive (excluding any questions relating to charges) with a view to ascertaining what practical measures can be taken by the British Transport Commission and the Executive in order to secure greater efficiency and economy, and to report." The Minister said that the membership of the committee would be announced shortly. This step has followed the presentation to the Minister on April 21 by a group of Conservative Members of a memorandum expanding an earlier motion calling for an inquiry. Their supplementary proposals were for a short-term technical inquiry and a long term investigation of financial matters and of the level of London charges in relation to other parts of the country. Emphasis was placed on the special conditions of London travel, where a greater part of the family budget goes on fares than elsewhere. Although the Minister has excluded charging questions from the inquiry now to be undertaken, because statutory machinery for this purpose already exists, he said in answer to a supplementary ques-

tion that the inquiry would be free to consider practical measures to improve economy in administration and their eventual bearing on the cost to the travelling public. Various proposals for economies by London Transport were made at the recent Transport Tribunal hearings of the B.T.C. application for its Passenger Charges Scheme, 1953. They affected matters of detail such as scale of issue of uniforms, advertising, and loudspeaker installations, and it was urged for the Commission that in 22 days the objectors had been unable to raise issues to support the claim that London Transport was not an efficient organisation. There can be no doubt that the officers of the Executive have been keenly engaged in seeking to effect economies in endeavours to keep costs down while maintaining public services. Whether a committee of external members is likely to achieve greater success may be doubtful, but its appointment may serve to allay public anxieties. Much will depend on the composition of the body appointed to investigate.

Fares Inquiry Hearing Concluded

HEARING of evidence by the Transport Tribunal on the B.T.C. application for its Passenger Charges Scheme, 1953, concluded on April 24 after sittings occupying twenty-three days. At the final session, reported on another page, Mr. Harold Willis, Q.C., for the British Transport Commission, referred to the many suggestions from witnesses that reduced fares on London Transport would promote sufficient extra traffic to raise the revenue required. He maintained that the London Transport Executive had stressed repeatedly its desire for the most cordial relations with the travelling public, and asked, therefore, if it was likely that increases would be sought if the desired result could be obtained by other means. One witness drew attention to the fact that the B.T.C. application was made on a date close to the announcement of the Railway Executive venture with the "Starlight Special" cheap fare Anglo-Scottish trains as a means of reviving traffic. While the conditions are dissimilar, these apparent differences of policy inevitably attract public comment, and it may also well be asked why the Commission should intend to abolish non-intermediate seasons at lower rates when these have been considered commercially justified by the main-line railways. Public confidence in fares policy would be greater if it was guided by those who operate the services. Mr. Hubert Hull, President of the Tribunal, said at the end of the hearing that a decision regarding changes in the scheme, if a scheme was confirmed, would have to await the passing of the Transport Bill.

The British Industries Fair

THE British Industries Fair opened at Castle Bromwich, Olympia, and Earls Court on April 27, and will continue until May 8. Engineering, electrical, and hardware products are shown at the Castle Bromwich Section, and it was at the opening here that Mr. A. B. Waring, President of the Birmingham Chamber of Commerce, emphasised the increasingly intensive world competition that lends such importance to this annual display of British achievements and inventiveness. Exhibits of materials handling devices, electronic controls, and new production processes by numerous firms show not only that the British exporter can equip the world to meet the conditions of the present time, but also that home industry is fully alive to the latest technological methods for improving productivity. Indications of the extended use of electrical power as a contribution to the fuel problem are given by some massive equipment for the B.E.A. super-voltage grid, and many well-known firms are showing equipment for diesel, diesel-electric, and electric traction, not forgetting battery traction, now of growing industrial interest because of developments in cell construction. British Railways are running special trains to Castle Bromwich from Euston, Manchester, and Sheffield, and various main-line services on the Derby—Birmingham—Bristol route are stopping at the station during the period of the fair. Traffic inquiry offices are open at all three sections.

Indian Engineering Production for Railways

THE present Indian Railways centenary celebrations have been supported by numerous commemorative publications, from which those unable to visit the exhibition and associated events can gain an impression of railway engineering progress in the country. Among these is an illustrated publication of the Engineering Association of India, "Railways & Engineering Industries," containing articles on the expanding contribution to railway supplies made by a variety of Indian industrial activities. A foreword surveys the field of railway requirements now met in full by the industry of the country. The Indian railways are stated to be independent of foreign supplies both of structural steel and of steel for rails, wheels, tyres, axles, bolts, nuts, rivets, and similar components. Normal annual requirements of rails, wagons, and coaches are now being met within the country, and the new coach-building factory at Perambur, opened last year, has been planned for a full yearly output of 350 all-steel lightweight vehicles of integral construction. Progress with the building-up of a home locomotive industry is reported, the Chittaranjan Works having turned out 49 locomotives up to the end of 1952 (the first to be assembled there was completed on November 1, 1950), while the number of metre-gauge locomotives from the Tata Locomotive & Engineering Co. Ltd. up to January 31 last was 35.

Overseas Railway Traffics

GOLD COAST RAILWAY receipts for February at £371,022 were £71,785 more than a year previous; this brings the aggregate for the 48 weeks of the financial year to £3,639,678, or £485,146 more than for the corresponding period of 1951-52. The decrease compared with January, for which receipts were £444,541, seems largely seasonal, as the January figure was some £61,000 over that for January, 1952. The result for the year ended March 31 may prove to be an increase over the preceding year of over £500,000, or 12½ per cent; but this might be offset by much increased working expenditure. Midland Railway of Western Australia receipts for January at £52,562 were nearly £6,000 down on the previous year; for February they were £54,492, very slightly more than for the same month of 1952. Aggregate receipts from July 1, 1952, to the end of February were £438,874, a decrease of £37,815 over the corresponding eight months of 1951-52.

B.T.C. Plans for Scottish Railways

THE statement on the future organisation of railways in Scotland made last week by Lord Hurcomb, Chairman of the British Transport Commission, at a press conference at the end of his four-day Scottish tour, was not illuminating. This was mainly because the future of the railways under the Transport Bill in Scotland as in other parts of Britain is to be the subject of a White Paper, the contents of which, even if he knew them, he could hardly divulge now. Furthermore the object of the tour was to collect opinions from organisations representing Scottish industry, chambers of commerce, local and central (Scottish) Government authorities, and similar bodies rather than to publicise what at this stage must be the Commission's ideas. The main Scottish opinion heard by Lord Hurcomb is said to have been in favour of a Scottish authority for the railways with autonomy in matters of local interest which did not impinge on principles or policies affecting the whole country—which is vague though innocuous. He did not find any body of opinion in favour of complete severance of the Scottish from the rest of the British railway system.

Scottish Railway Board

OUTLINING the Commission's proposals, Lord Hurcomb mentioned a Scottish Railway Board responsible to the B.T.C. but with considerable autonomy in matters of finance, charges, and administration. He is reported to have said that since nationalisation the Commission had felt it could with advantage devolve much more

power than was practicable under company ownership; the reference here presumably is to the relative lack of Scottish autonomy in the London-controlled L.M.S.R. and L.N.E.R., and not to Scottish railways before grouping in 1923. Two members of the Scottish Railway Board, it seems, would be Members of the B.T.C. and act as a link between the two bodies. It was not stated how far the functional system of management is to continue. No strong central railway management, which we consider vital, seems envisaged in London. Autonomy, suitably modified, is desirable for the railways of Scotland—but just as it is for any other of the areas into which British Railways are to be divided, to give scope for area railway managements to run their railways on a sound commercial basis, and not scope for local politicians. Our own proposals for Scottish railway reorganisation were stated in our issue of December 12; they include a regional general management responsible to central railway management in London on non-functional lines, and adequate Scottish representation on the B.T.C. It is to be hoped that Parliament will approve plans in the forthcoming White Paper that embody these essentials.

Cape Town Suburban Services

AS soon as the voltage is changed from 1,500 to 3,000 volts to conform to that of the main-line electrification now in progress between Bellville, Worcester, and Touws River, 149 miles, the South African Railways intend to improve their Cape Town suburban services. It had been hoped originally to change over at the same time as the Bellville-Worcester service was introduced, but because of the longer period now required to deliver the new motor coaches on order the conversion is being carried out piecemeal. The Bellville and Cape Flats sections will be converted first and the Simonstown line will be changed over later. For a time, therefore, the services in the Peninsula will operate on different voltages. When the new motor coaches are introduced, increasing the total in use from 95 to 108, schedules will be cut and a more frequent rush-hour service provided. The acceleration in running times will compensate for the increased stopping times at stations necessitated by growth of traffic.

U.S.A. Passenger Service Losses

AN intensive survey of its passenger traffic operation, that has been conducted by the Chesapeake & Ohio Railway, goes to show that some of the losses debited to the passenger side are more apparent than real. The Interstate Commerce Commission prescribes the general practice that each railway must follow in its book-keeping, but within that framework a new approach to book-keeping methods may lead to conclusions differing considerably from those generally current. Passenger traffic on the C. & O. is small relatively to its coal traffic, but in 1951 showed a book loss of \$4,400,000—\$15,900,000 in revenue as against \$20,300,000 in working expenses. Nearly half this loss is to be wiped out by dieselisation of the passenger services; some \$750,000 will be saved by serving pre-cooked, frozen, and reheated meals in restaurant cars instead of cooking on the cars; an economy of \$160,000 will be possible by consolidating, and, where possible, eliminating unprofitable branch line runs; and, significantly, \$750,000 of the supposed loss will disappear as the result of a fairer apportionment of operating costs as between the different departments of the railway.

Launching Girders of a Severn Bridge

AN interesting method devised by the engineer in charge has been used for launching girders for the new bridge which is being built to carry the Gloucester-South Wales line of the Western Region across the western channel of the Severn at Gloucester. Because of the alignment, only the girders for one of the three main spans could be unloaded from wagons on the adjoining old bridge, a Brunel wrought-iron structure, which will be superseded. Those for the western span were launched with the aid of a breakdown crane standing on one of the

approach spans. Extension noses were fitted to each girder, and the girder, after being swung out over the river, was lowered until the nose rested on a small turntable, supplied by the contractor, which was fitted with rollers and turned on ball bearings; it was mounted on the far pier. When both girders of this first span were in place, rails were laid on temporary cross-girders to allow the crane to move forward and repeat the procedure for the middle span.

Rerailing after the Shawford Accident

AN account is given on another page of how the Southern Region "Lord Nelson" class locomotive, *Howard of Effingham*, was retrieved after running through a sand drag and down an embankment at Shawford on July 20 last year. As in the operations at Weedon, L.M.R., described in our July 18 and 25 issues last year, a sloping track was constructed on to which the locomotive was rolled upright and hauled to the top of the bank. A novelty of the Shawford operations, however, was the means by which it was ensured that the locomotive would be standing on rails after being righted. In this case rails were lashed to the bogie and coupled wheels before rolling up began, so that in whatever position the engine came upright on the timber platform, there would be rails beneath it which could be connected to the temporary track. This measure, illustrated in the article, proved fully effective in practice. The rolling up by means of jacks and timber packing occupied four hours, and the engine settled upright in the correct alignment for subsequent operations.

Southern Region Summer Timetables

FIRST to appear of the summer timetable books is that of the Southern Region. The duration of the summer train service is extended, as compared with that of last year; in 1952 the period covered was from June 30 to September 14, but in 1953 it is from June 8 to September 20, a difference of four weeks. Very wisely, the introduction of the new services on all Regions, and particularly of the accelerated trains, has been deferred until the week after the Coronation, when the number of additional trains that will be necessary might have interfered with punctuality.

Actually, the Southern has made fewer changes than any other Region, the only acceleration of any note being that brought about by a reorganisation in the working of the up "Atlantic Coast Express." Last summer, except from August 5 to 28, the 9.40 a.m. from Padstow was a through train to Waterloo on Mondays and Fridays only; on Tuesdays, Wednesdays, and Thursdays passengers had to leave Padstow at 8.30 a.m. to reach Waterloo on the "Atlantic Coast Express" at 3.40 p.m., as in the winter timetable. This summer there is a 9.35 a.m. from Padstow and 10.20 a.m. from Bude daily, reaching Waterloo at 3.32 p.m. on Fridays and daily from July 28 to August 27, and at 3.40 p.m. on other days. This is a substantial improvement.

On Mondays and Fridays and daily during the height of the season the up "Atlantic Coast Express" is relieved by a 12.16 p.m. from Exeter to Salisbury and Waterloo, due at 3.32 p.m., with the "Atlantic Coast Express" proper leaving at 12.30 p.m. and reaching Waterloo at 3.40 p.m. In the reverse direction the daily "Atlantic Coast Express" working is altered from Exeter Central westwards. Instead of three trains, at 2.10 p.m. to Bude and Padstow (first stop Halwill), 2.17 p.m. to Ilfracombe, and 2.25 p.m. to Plymouth, there will be two only—at 2.10 p.m. to Bude, Padstow, and Plymouth (dividing at Okehampton), and 2.20 p.m. to Ilfracombe. There is very little change in the arrival times.

There will be some rearrangement of the Saturday morning trains from Waterloo to the West of England, in some cases with appreciable accelerations, as, for example, the 8.5 a.m. to Exmouth (previously 7.42), 24 min. faster; the 10.15 a.m. to Ilfracombe (previously 10.5), 10 min.; the 10.35 a.m. to Padstow (previously 10.22), 13 min.; the 10.45 a.m. to Seaton (previously 10.35), 10 min.; the 11.15 a.m. to Padstow (previously 11 a.m.), 15 min.; and the

11.45 a.m. to Exmouth (previously 11.35) 10 min. In the up direction, on Saturdays, the 11.45 a.m. from Bude is to run independently of the 10.45 a.m. from Padstow from Okehampton to Waterloo, arriving 5 min. earlier. On Saturdays these two, with the 10.30 a.m. from Ilfracombe and the 10.48 a.m. from Torrington, are four separate services all bearing the title "Atlantic Coast Express."

On the Bournemouth line on Saturdays the 7.30 a.m. from Waterloo to Weymouth is to be diverted from the Bournemouth to the Ringwood line, arriving at 11.1 instead of 11.16 a.m.; the 8.30 a.m. to Weymouth is to be greatly accelerated, arriving 44 min. earlier, at 11.46 a.m.; the 10.42 a.m. to Swanage and Weymouth via Ringwood is diverted to Bournemouth West and a new 10.54 a.m. runs to Swanage; and there is an additional 12.20 p.m. to Bournemouth, passed *en route* by the 12.30 p.m. "Bournemouth Belle." In the up direction on Saturdays the 1.15 p.m. from Swanage to Waterloo via Ringwood starts at 1.33 p.m., but arrives only 9 min. later, at 4.49 p.m., its path from Bournemouth being taken by the 2.20 p.m. from Bournemouth West (previously 2.10 p.m.), while a new train is to run from Dorchester at 1.37 p.m. via Bournemouth, reaching London at 4.54 p.m.

On the Portsmouth line the 10.57 p.m. "all stations" from Waterloo to Portsmouth is to start at 11.20 p.m., and be non-stop to Woking; it will be balanced by a new 11.5 p.m. from Portsmouth & Southsea.

There are no changes worth mention in the Central Division, and the only development in the Eastern Division is that the 4.15 p.m. from Charing Cross has been accelerated to its prewar 80 min. time to Folkestone Central, and the 10.8 (now to be 10.14) from Sandwich (11.7, now 11.10 a.m. from Folkestone Central) to a similar 80 min. run to Charing Cross, both calling at Waterloo. These two trains receive the name "Man of Kent." There is no corresponding acceleration of the 4.55 p.m. from Folkestone Central (a prewar 80 min. train), which still takes 85 min. The 7.15 p.m. down, once an 80 min. train, now calls at Ashford as well as Waterloo, and takes 88 min.

Canadian Pacific Railway

THE volume of transport service provided by the Canadian Pacific Railway in 1952 was in excess of that of any previous year. The record grain harvest in Western Canada, and a continued high level of activity in industry and in the development of natural resources made heavy demands on railway facilities. Notwithstanding a new peak in freight traffic and gross earnings, railway net earnings were equivalent to only 6.3 cents per dollar of gross, the same as in 1951. As a result of the large grain crop and a large carry-over from the previous year, the movement of grain and grain products formed more than 40 per cent of total freight traffic. As rates on most of the grain moving within Western Canada are still at a level established in 1899, the brunt of increases in freight rates towards meeting higher railway costs has had to be borne by the remainder of the traffic. Railway wage rates and prices of materials have doubled since 1939, but the average increase in freight rates in terms of all traffic has been a half only. This disparity, although mitigated to some extent by increased efficiency in transport, as is stated by Mr. W. A. Mather, President of the company, in his annual report for the year ended December 31, 1952, has markedly affected the net earnings.

Some of the principal results were:—

	1951	1952
Passenger revenue	37,810,166	38,958,376
Freight revenue	351,435,788	376,858,445
Miscellaneous—		
Gross revenue (incl. taxes) ...	428,911,639	457,808,969
Working expenses	402,098,807	428,878,189
Net earnings	26,812,832	28,930,780
Other income	29,343,635	22,651,775
Fixed charges	12,848,997	12,504,010
Net income	43,307,470	39,078,545
Dividends	23,428,010	23,766,846
Balance	19,879,460	15,311,699
Operating ratio (per cent.) ...	88.93	88.6

During the year, \$60,000,000 was spent on improvements

and additions to railway properties, bringing the total expended during the past three years to \$180,000,000. It is estimated that capital outlays of \$475,000,000 will be required during the next five years to replace worn-out facilities and to continue the programme of improvements and additions necessary to keep pace with the expanding economy. To ensure a sound basis for financing new capital requirements and a reasonable return to shareholders on their investment, the Board of Transport Commissioners has been requested to establish the net investment in the railway at a rate base and to fix as fair a rate of return of not less than 6½ per cent on such base.

Increasing for the sixth successive year, railway gross earnings amounted to \$457,800,000 and exceeded the previous record of 1951 by \$28,900,000. Freight earnings, which provided more than four-fifths of gross earnings, were up by \$25,700,000. The volume of freight traffic rose by 8 per cent in terms of ton miles, and was greater than in any previous year. There were decreases in the tonnage of many manufactured commodities, and total tonnage would have been below the 1951 level but for the substantial increase in grain handlings. Passenger earnings increased \$1,200,000. There was a decrease in the number of passengers carried, but a higher proportion of long-haul traffic resulted in an increase in total revenue passenger miles.

Working expenses, at \$428,900,000, were up \$26,800,000. The cost of changes in working conditions and wage rates for the year amounted to \$19,000,000. This included the impact for a full year of the 40-hr. week granted to non-operating employees with effect from June, 1951, and provision for the retroactive application to various dates of increases granted to certain operating employees early in 1953.

The track maintenance programme included the laying of 567 miles of new rail, all 100 lb. or over, and 2,800,000 new sleepers, of which 96 per cent were treated, and ballasting 581 miles of line. Automatic block signal systems were installed on 135 miles of track. The equipment repair programme covered complete overhaul of 708 steam locomotives, periodic repair of 107 diesel-electric units, and the general repair of 37,948 freight and 1,088 passenger vehicles. Operating efficiency showed a marked improvement. The average freight train load was up from 1,700 to 1,748 tons, with an increase in freight train speed from 16.6 to 17.4 m.p.h. The improvement, while in part attributable to the greater proportion of long haul and heavier commodities handled, reflects the increasing benefits resulting from the greater use of diesel power, automatic block signalling systems and other technological advances. Total assets at the end of the year amounted to \$1,918 million, an increase of \$57,000,000. The capital expenditure on rolling stock was \$48,200,000.

Almost all organisations representing employees in railway service in Canada requested wage increases during the year. Negotiations resulted in settlement with enginemen for a net increase of 11 per cent, and with sleeping and parlour car conductors for increases of 11 and 5 per cent respectively. The requests from non-operating employees for a general wage increase and other changes in their agreements came before a conciliation board. In subsequent negotiations agreement was reached providing for a general increase of 7 per cent plus 7 cents an hour, retroactive to September 1.

At the end of August, the company re-entered trans-Pacific trade with two of the London Beaver ships, which were transferred from North Atlantic service and renamed *Maplecove* and *Mapledell*. They now provide a monthly freight service between Canadian and North West American ports, and Japan, Hong Kong and the Philippine Islands. In March, the *Empress of Australia* was sold for breaking up. To maintain Atlantic services, an order was placed for the construction in Scotland of a 22,500 gross-ton liner to carry 900 tourist and 150 first-class passengers and have a cargo capacity of 5,000 deadweight tons.

On January 25, the Board of Transport Commissioners authorised Canadian railways to make a general increase of 17 per cent in freight rates, with certain exceptions, in lieu of a 12 per cent interim increase authorised on July 4,

1951. This increase became effective on February 11. An application was made on July 14, and amended on September 13, for an immediate general increase of 8 per cent in freight rates pending hearings on the balance of the application which asked the board to establish a return of 6½ per cent on the net investment in its railway property, and for a further general increase of 9 per cent in freight rates calculated to provide a return, as nearly as may be, of 5 per cent on such net investment. The immediate increase of 8 per cent was rejected. Hearings on the other phases of the application began on November 10 and concluded on February 5, 1953. Judgment was reserved.

To meet the cost of increases in salaries and wages for non-operating employees, the board authorised a general increase of 9 per cent in freight rates from January 1, 1953. By the authorising order, the board cancelled the expiration date to which the previous increase of 17 per cent was subject. An increase of approximately 28 per cent in rates on grain and grain products moving with Western Canada for domestic consumption, but not including grain and grain products moving at the so-called Crowsnest Pass rates, or rates related thereto, was granted to take effect from November 10.

New motive power delivered consisted of 60 diesel-electric units, bringing the number of such units in service at the end of the year to 292. The change to diesel power for freight and passenger services between Calgary and Revelstoke was completed. In preparation for the operation in 1953 of diesels on the Kootenay and Kettle Valley divisions, work was begun in July on facilities for their maintenance. The change from steam to diesel power will increase line capacity on those divisions and improve the service in southern British Columbia. Studies are continuing to determine further areas where complete or partial conversion to diesel power would be most advantageous. Diesel locomotives are being used in areas selected with a view to obtaining the greatest advantage from the capital expended. The policy has been to provide sufficient units to handle the peak volume of traffic in each of the selected areas. Servicing and repair facilities are being planned so that, whenever traffic is below peak volume, diesel power can be operated in substitution for steam locomotives in adjacent areas. During the year, a total of 4,138 wagons and 50 baggage and parcels vehicles was placed in service.

Capital appropriations amounting to \$7,500,000, in addition to those approved at the last annual meeting, were authorised during the year. Approval would be requested also for capital appropriations for 1953 amounting to \$76,200,000. The appropriations for new rolling stock make provision for 73 diesel-electric units, 3,475 wagons, 110 coaches and 312 service vehicles.

Improving the Western Australian Railways

THE Western Australian Government Railways are engaged on a programme of modernisation whose large scale is apparent from significant figures given to us by Mr. C. W. Clarke, Assistant Commissioner (Engineering), who, after visiting the United Kingdom, is making a brief tour of North America.

By next year about 60 per cent of the locomotive stock and 70 per cent of the wagon stock will have been renewed since the war. Of the 424 locomotives in service at the end of the war only the 60 "P" and "PR" class, the ten "M.S.A." class and the 25 Australian Standard Garratts (acquired during the war) were less than 30 years old. In 1946-47 ten "S" class, built by the Administration, and 14 "U" class locomotives, built by the North British Locomotive Co. Ltd. and originally intended for the Sudan, were added to stock, followed in 1949-50 by 35 "PM" class 4-6-2s, supplied by North British and in 1951-52 by 60 "W" class 4-8-2s built by Beyer, Peacock & Co. Ltd. A total of 24 "VF" 2-8-2 locomotives ordered from Beyer, Peacock & Co. Ltd. has been sub-let by that company to Robert Stephenson & Hawthorns Limited.

The replacement of obsolete steam by diesel-electric loco-

motives is carried out on the basis of three diesels to five steam; thus 110 steam locomotives will be replaced by 66 diesel-electrics—48 "X" class main line machines being built by the Metropolitan-Vickers Electrical Co. Ltd. and 18 "Y" class for branch lines, which the British Thomson-Houston Co. Ltd. is supplying. The mechanical parts of the main-line locomotives are being built and the locomotives erected at the Stockton works of Metropolitan-Vickers—Beyer, Peacock Limited. In addition there are on order three diesel-mechanical shunters and 22 diesel-mechanical railcars under construction by the Drewry Car Co. Ltd., and Cravens Railway Carriage & Wagon Co. Ltd. respectively.

In 1945 the Department had approximately 12,000 wagons, expressed in terms of four-wheel vehicles. Since 1947 orders have been placed for 1,700 G.E.-type wagons, 3,826 four-wheel wagons built on the new standard 18-ft. underframe and 408 wagons built on the new standard bogie underframe. A total of 6,934 wagons has been acquired or ordered since the end of the war. Approximately two-thirds of the new wagons have been built by firms in the United Kingdom and the remainder are being built by firms in Australia. Over 70 per cent of the wagons ordered have been delivered and deliveries of the remainder are proceeding at the rate of nearly 100 a month, so that by 1954, approximately 70 per cent of the entire wagon stock of the railway will consist of wagons built and supplied since the war.

The new wagons on order include 300 "XB," 250 "HC," 600 "GH," 760 "DC," 616 "GM," 1,000 "FD" and 300 "B.E." In addition to these, 50 "RC," 90 "TA," 72 "QC" and 180 "VD" wagons, and 61 logging wagons mounted on the new standard 42-ft. bogie underframe, are on order. With the exception of the "FD" and "GM" classes, the logging wagons, and 1,700 "GE" wagons being built or already supplied by Australian manufacturers, the stock is being built in the United Kingdom by the Birmingham Railway Carriage & Wagon Co. Ltd., Cravens Railway Carriage & Wagon Co. Ltd., Gloucester Railway Carriage & Wagon Co. Ltd., Metropolitan-Cammell Carriage & Wagon Co. Ltd., and R. Y. Pickering & Co. Ltd.

All new stock is being fitted with the N.C.D.A. coupler, designed for a drawbar pull of 54,000 lb. compared with the 30,000 lb. of the previous type, and supplied by the A.B.C. Coupler & Engineering Co. Ltd.

The expenditure on locomotives and wagons has exceeded £14,000,000, and the rolling stock situation by 1954 will probably be better than on most other railways. Unfortunately, the condition of the permanent way is not regarded as satisfactory and the railway must now concentrate on its improvement. There are approximately 4,200 miles of open line track and about 500 miles of yards and sidings. Over 70 per cent of the open line track is laid with rails which have been in service for at least 40 years, and on many of the main lines, such as Northam to Kalgoorlie, Armadale to Bunbury, and Spencers Brook to Albany, the rails are 50 years old.

On a normal rail renewal programme, over 100 miles of rails require to be renewed each year. Unfortunately the Department has been unable to renew even 50 miles of rails since the war and expenditure on track renewal alone is likely to exceed £2,000,000 a year during the next 15 years. This is a major task facing the Administration and it is unlikely that further orders for locomotives or wagons can be considered until the track is brought up to a satisfactory standard.

Until last year, because of shortage of locomotives and wagons, the Department was able to handle only half the wheat and superphosphate traffic offering, the remainder having to go by road. Carriage of these commodities normally accounts for some 30 per cent of the total ton-mileage of the system. The improvement in the locomotive and wagon situation, however, will enable these traffics to be carried entirely by rail, as well as the much-increased coal traffic. The output of coal from Collie mines has risen in six years from about 450,000 to 850,000 tons a year, and, like the pyrites traffic from Norseman to the Coast, is all moved by rail.

An Odd U.S.A. Wage Award

BETWEEN March, 1951, and May, 1952, the U.S.A. railways made five wages agreements with nineteen trade unions representing their employees. Each agreement contained a moratorium clause to the effect that "if Government wage stabilisation policy permits so-called annual improvement wage increases, the parties may meet with the President of the United States, or such other person he may designate, on or after July 1, 1952, to discuss whether or not further wage adjustments for employees covered by this agreement are justified, in addition to increases received under the cost-of-living formula." If at this conference the parties could not agree, the President was to be asked to appoint a referee to decide whether increases were justified and, if so, what they should be. On December 1, 1952, the President requested Professor Paul N. Guthrie, of the University of North Carolina, to act as referee and managements and unions agreed that his award would be final and binding on both the parties.

Professor Guthrie held hearings for some seventeen days in January. The trade unions asked him "to award an improvement factor of six cents per hour per year for all employees covered by the respective agreements," as from the dates these took effect. The unions urged that the productivity of railwaymen was increasing more rapidly than output in the national economy as a whole. Under the agreements, which run until October, 1953, the men obtained an initial increase of 12.5 cents an hour, with an escalator clause providing for periodic adjustment of wages to changes in the cost of living, but the unions contended that the concession did not recognise rising output. They also argued that increases made to compensate for the shortening of working hours should not be taken into account.

The railway companies protested that the concept of annual improvement was ill adapted to the conditions of their industry and had been tried only in expanding industries, such as the manufacture of road motor vehicles, where possibilities of enlarging output were greater. Railway earnings, the carriers said, were low and should be enhanced if capital investment in railway stocks was to be encouraged. It was said also that railway employees, whose hours of work had been shortened without a reduction in pay, were receiving the advantages of greater productivity.

The referee concluded that there was equity in the claim that during the life of the agreements the real wage position of railway employees should not be allowed to deteriorate in relation to real wage improvements among other large groups of workers. To maintain an equitable relationship, Professor Guthrie awarded an increase of four cents an hour as from December 1, 1952. He did not issue his award until March 18, and emphasised that his decision arose out of a particular set of circumstances and within a particular time span; it did not pretend to pass judgment on how the parties should deal with the productivity issue in relation to wages in future. In a few months, he added, the parties would have an opportunity to consider in collective bargaining the whole matter of wages, when all relevant considerations could be weighed against each other.

The procedure followed in dealing with this question of improvement wage increases seems to be without precedent. The grounds for granting an advance are somewhat flimsy and clearly the amount of the increase was not fixed on any definite principle. The time was inopportune for adding to railway working costs. In the eleven weeks of the present year before the date of the award, the number of wagons loaded on the U.S.A. railways decreased by 427,000, or 5.4 per cent, compared with the same period of 1952. With such a large fall in the volume of traffic, the productivity of railway employees is likely to diminish unless their numbers are reduced considerably. It is fortunate that there will be an opportunity of reviewing the whole structure of railway wages and conditions in the U.S.A. in October.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Isle of Wight Railways

April 25

SIR,—In your April 24 issue a correspondent would seem to be misinformed about the closing of the Bembridge branch in the Isle of Wight. The Southern Region Summer timetable, on sale here from April 16—surely a record!—shows a service of normal summer intensity scheduled from June 8. Was the decision on the fate of this branch taken too late for the printers? If so, one would have expected an erratum slip. I presume that the branch has had a reprieve.

Yours faithfully,
G. CULLIS

797a, Christchurch Road, Bournemouth

[As reported elsewhere in this issue the Bembridge branch will not remain open for the summer service. Our correspondent suspects correctly that the decision to withdraw the service came after the timetable had gone to press, but the public is being informed of the closure by poster announcements at stations.—Ed., R.G.]

Features of L.M.S.R. Electric Design

April 14

SIR,—Your correspondent's claim in your April 10 issue that the L.M.S.R. adopted the welded conductor rail before the last war reminds one that the same company was well ahead in a number of electric traction features, for example, rectifiers (especially glass bulb type), high-speed circuit-breakers, improved track details (including an excellent conductor rail profile), lighter rolling stock and equipment, and air-operated doors. These and many other items helped to reduce both capital and operating costs. The aim seemed to be a reasonable balance of efficiency without frills, simplicity, reliability and avoidance of all unnecessary expenditure.

But the L.M.S.R. did not carry out large-scale schemes that attracted great attention and its achievements are forgotten by many and are possibly unknown to and unnoticed by the younger generation. Whilst the Southern Railway was forging ahead admirably with extensions in all directions the L.M.S.R. was quietly getting on with numerous developments in design that proved to be of greater value than many may appreciate.

Yours faithfully,
JUMBO

The Economics of Diesel Traction

April 24

SIR,—The 1952 report of the St. Louis-San Francisco Railway Company teaches a lesson in railway economics. The Frisco, as it is commonly called, with its subsidiary companies, operates over 5,000 miles of road stretching from St. Louis and Kansas City through Alabama to the Gulf of Mexico and through Oklahoma to Dallas and Quanah in Texas. One wagon in every nine passing over the line contains refined petroleum. The Frisco put its first freight diesel into service in 1948 and ran its last freight steam train on February 29, 1952, so that last year's results were essentially due to the use of 407 diesel locomotives.

The freight work of the diesel fleet was done with record efficiency. A tonnage of 31.4 million tons, slightly above the 1951 level, was moved an average distance of 277 miles in train loads of 1,116 tons at a speed of 18 m.p.h. Net ton-miles were 1.6 per cent higher than in 1951 and gross ton-miles were 2 per cent up. In spite of the larger traffic volume, train-miles were reduced by 4.7 per

cent and train hours by 6 per cent. Gross ton-miles per train hour rose by 8.6 per cent on 1951 and were 38 per cent above the 1948 level. The operating ratio dropped from 79.4 per cent in 1948 to 73 per cent and the company had a net income of \$14½ million, compared with \$7.3 million in 1948 and \$8.9 million in 1951.

The moral is that any railway proposing to test the possibilities of diesel traction should equip one of the busiest regions of its system entirely with the new motive power and make adequate provision for the servicing and maintenance of the diesel locomotives. Random experiments at a number of disconnected places are not calculated to lead to trustworthy conclusions.

Yours faithfully,
R. BELL

Frognaal, N.W.3

Equipping Railways for New Circumstances

April 13

SIR,—Three letters in your issue of April 10 are worthy of comment. Mr. R. Bell, in his second paragraph, brings out once again, as he has done before, the striking comparison between Pennsylvania Railroad freight train operating results and those of British Railways, much to our disadvantage; the former, he says, represents *eighteen times* the output of freight train working on our lines. It is much to be regretted that he does not proceed to recommend the only remedy, namely, to confine the metals to the haulage of fully-loaded trains between concentration centres fed and tapped by road. Nevertheless, competition is about to be restored—this time with the railways unfettered—and I believe the railways will adopt the remedy. If they do not, they will be in a worse position than ever.

The two following letters are much to the point at this time of transition. British Railways have not had a fair deal at all; they have in fact been treated abominably, and I am glad that Mr. Newton Brook has said so. If they are to be free to release the old "imprisoned splendour," they must be given the golden key—adequate new capital. Has there ever been anything so crudely foolish, with a capitalist society, as to deny to one of our largest capital undertakings adequate sustenance?

I do not go all the way with Mr. Dyson on decentralisation; it seems to me that, in pursuance of the ideology of "smaller" units of administration, while retaining central control of the vital control factors—finance and charging—we are heading for wastefulness in expenditure and niggardliness in administration. We are going to permit money, not functional efficiency, to dominate railway policy. The more things change the more they remain the same (I spare your readers my French).

Yours faithfully,
FREDERICK SMITH

65, Hallowell Road, Northwood, Middlesex

DERWENT VALLEY LIGHT RAILWAY.—At the annual general meeting of the Derwent Valley Light Railway on April 23 the Chairman, Mr. C. W. G. H. Thompson, said that there had been a drop in tonnage from 82,723 to 69,216 tons. Approximately 10,000 tons of this decrease resulted from the cessation of exceptional Air Ministry traffic. Tonnages of agricultural traffics continued to fall, doubtless largely because of the increase of "C" licenses, and possibly also increases in rates. Gross traffic receipts were £23,696, against £23,939, but expenditure was £17,361 (£16,957). Net revenue, £8,019, compared with £8,649 in 1951. After adding the balance brought forward, deducting interest paid on debenture stock and making provision for taxation, £8,804 9s. 2d. was available. The directors recommended that a dividend of 5 per cent on both the preference and ordinary stock, and that £2,000 be placed to general reserve, leaving £2,754 9s. 2d. to be carried forward.

THE SCRAP HEAP

"Lost Leader" Class

British Railways had the last word on the [Liberal Party] conference. The name of the engine pulling many delegates back to London? It was *Winston Churchill*.—From "*Liberal News*."

Twixt Cup and Lip

Members of the Stephenson Locomotive Society have planned a sentimental journey from London to Portsmouth and back next Sunday in a steam train. ... To complete the experience I hope the Society's members will arrange to drink tea and clear soup on the journey. My experience is that a higher proportion of both can be got into the mouth in a steam train than in an electric train.—"*Peterborough*" in "*The Daily Telegraph*."

Short Story

A party of 120 fishermen recently spent £132 on refreshments on the train between De Aar and Walvis Bay and De Aar. The length of the journey and the semi-arid nature of the country, a railway catering officer stated, had nothing to do with the quantity of refreshments consumed. Fishermen, he added, were marvellous customers. They got so thirsty.—From "*South African Railway News*."

Bookmaking in the Booking Hall

A station booking hall had been used as a "miniature racecourse," according to a chief inspector of police at a London police court. The court was told

that, armed with a search warrant under the Betting Act, 1853, police went to Dalston Junction Station, London Midland Region, and arrested eighteen men. The inspector said that in the booking hall there were two public telephone kiosks. One man had been acting as telephone operator, occupying the box up to three hours at a time during racing hours. Four men were fined and the rest bound over.

Tidiest Station

Sandhurst Halt on the Reading-Guildford line has won first award as the tidiest station in the Southern Region.

Worm's Eye View

Nowadays flying is so common that I have to apologise if I go to Paris by "*Golden Arrow*." I explain it by saying that I like to see the beautiful Kent countryside.—Lord Brabazon, speaking at a luncheon on April 23.

Making the Most of Steel

Salvage-conscious workers, helped by enthusiastic technicians who continually discover new and ingenious ways of utilising recovered materials, are lessening the effects of the steel shortage at the British Railways locomotive works, Crewe.

Longitudinal stays from old boilers are drawn down in a forging machine and shaped into rivets. Brick arch bars, for new or reconditioned boilers, are now made from re-claimed signal detector rods.

Scrap plate, from oxy-acetylene cutting operations is drawn down to square and rectangular bars for many purposes. Engine drawbars are also formed into hexagon-shaped bars and used to fashion high-grade nuts. Old axles are hammered down into crane pinions and boiler pads, armature shafts, and a variety of other components. Milling cutters when worn out are forged down to the next smallest size, re-cut and used again. After they are too small for any milling work, they are re-forged to make high speed steel tips.

Old piston rods are machined into a new shape and become efficient reversing screws; after they are worn out they are made into smaller screws, bolts and bushes.—From "*Target*," the monthly bulletin on productivity.

Travelogue

A Mr. G. C. Robinson has written to *The Evening News* enumerating the following vehicles in which he has travelled during the past 75 years, apart from transit by river and sea: perambulator; pushcart; growler; hansom; horsebus and tram; horse and trap; horseback; wagonette; penny-farthing cycle; geared ordinary safety cycle; tandem cycle; steam tram; steam train; tube train; single railcar (Reading to Hereford); Snowdon Mountain Railway; toboggan; motorcar and bus; and aeroplane.

The above is at first sight an exhaustive catalogue, but—

Dear Mr. Robinson, I note
Your recent proclamation
Of personal achievement in
Progressive transportation.

I, too, have ridden everything,
Equipped with bell and hooter,
I even beat you, for I've tried
A tricycle and scooter.

When I was young and silly, I,
Alas! was often hunting
For trouble in the station yard,
Pole-riding during shunting.

Hair-raising episodes galore
I've had—one in particular
Was when I risked my life and limb
Upon a French "funicular."

I rode a "penny-farthing" once,
Its shape had long bewitched me,
But, when I tried to turn the brute,
It hiccupped twice and ditched me.

Today I keep right up to date
And when, at times, I'm dashing,
Rolls-Royce-like, on my "Mini,"
Everybody says I'm smashing.

But, now we're old, our pleasures look
For pleasures more eclectic—
It seems you haven't sampled yet
The "Brighton Belle" Electric!

OLD TIMER

E 2

Mass Take-Off at Dumfries



Photo]

[L. Armstrong

Releasing some of the 12,000 racing pigeons that arrived by special train (in foreground) at Dumfries Station on April 25 for a race to their home lofts in Lanarkshire and West Lothian

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Total Staff

The total number of staff in the employ of the railways has passed 200,000 for the first time. At the end of December the figures were 105,402 Europeans and 96,210 non-Europeans. The 100,000 mark was reached in February, 1936.

GOLD COAST

Takoradi Port Extensions Opened

On April 24 Sir Charles Arden-Clarke, the Governor, opened the main extensions to the port of Takoradi. The extensions, begun in 1949, were intended to double the rate of export and import cargoes. The port is handling 2,250,000 tons a year, and the rate is expected to be 3,000,000 tons when all extensions have been carried out.

The scheme has involved laying thousands of cu. yd. of concrete on the sea bed, building new wharves and piers, and removing an 80-ft. hill to make room for a marshalling yard. The spoil has been tipped on 50 acres reclaimed from the sea.

INDIA

Construction of Kandla Port

A contract valued at Rs. 32,500,000 for the construction of the main harbour works at Kandla has been signed between the Government and three engineering firms, two of them Indian and the German firm Heinrich Butzer of Dortmund. Construction has begun.

The total cost of the port when completed in 1956 will be Rs. 13 crores. It is expected to handle over 3,000,000 tons of cargo a year and will rank next to Madras. It will also relieve congestion in Bombay by handling traffic intended for the Punjab, Delhi, Rajasthan and Western Uttar Pradesh. The port will accommodate four large ships at a time and will have four cargo berths capable of receiving freighters of any size.

The extension of the metre-gauge Kandla-Deesa line to the port itself is proceeding. Thirty-one miles of track and sixteen miles of roads have been completed within the port area.

Circular Railway at Calcutta

The plan for an electrified circular railway at Calcutta was approved after a two-month sitting by a special committee set up by the Government. The line will encompass the 30 sq. miles of the city and will include part of the railway system operated by the Calcutta Port Trust.

WESTERN AUSTRALIA

Washaways

As a result of a cyclone on March 24 and 25 extensive flooding occurred of the permanent way severely affecting the Northern, Eastern and Central parts of the system. Services were disrupted for periods from one to fourteen days and emergency road services were instituted for the conveyance of passenger and perishable traffic.

One feature of the washaways was that water flowing from the back country after exceptionally heavy rain many miles away reached the railway some days after the rain ceased, and this volume of water caused further washaways. Water from this source continued to flow over the track for days. Gangs worked day and night to restore the track, and, considering the widespread damage, repairs were effected and traffic restored rapidly.

Although the floods caused considerable damage and expense, a redeeming feature is the good water catchment which resulted. In some areas, particularly the north, water reserves had been almost reduced to nothing, and extensive cartage of water for locomotive and general purposes had become necessary. The weekly quantity of water hauled in the week ended March 23 for railway purposes alone was 1,834,000 gal., requiring 33 special trains. In the week ended April 6, when many dams had been replenished by the rain, the haulage dropped to 880,000 gal., carried by 22 special trains. This relief not only has meant a reduction in working expenditure, but has enabled locomotives to be returned to their normal duty.

Single Line Automatic Signalling

Single line automatic signalling is now in use between Moorhead and Collie, 6½ miles, with remote control from Collie. The installation contains features new to the railways and special instructions have been issued covering the working. Collie is the centre of the State coal industry, and the Collie-Moorhead section is the first section of the line from Collie toward Perth. The resignalling will facilitate train working on a busy line.

CANADA

Freight Rate Increases Contested

Eight provinces have asked the Federal Government to rescind the seven per cent increase in railway freight rates which came into effect on March 16. They claim that the Board of Transport Commissioners applied wrong principles in its judgment and the ruling was subject to errors that made it a substantial miscarriage of justice. The provinces involved are Nova Scotia, New Brunswick, Prince Edward Island, British Columbia, Manitoba, Saskatchewan, Alberta, and Newfoundland.

The increase is the second to take effect this year. A 9 per cent increase was granted from January 1, 1953. The petition charges the board with accepting railway statements of revenues and expenses without adequate investigation and says that it failed to consider possible revenue increases from charges in traffic volume and content during 1953. The Canadian Pacific Railway,

The Northbound "Blue Train" of the S.A.R.



The air-conditioned "Blue Train" of the South African Railways from Cape Town to Johannesburg and Pretoria in the mountains near Worcester in the Cape Province

the "yardstick" for freight rates, is alleged to have reported certain revenues as other income rather than rail revenues and the board not to have considered these. The board, continues the petition, did not investigate the accuracy of the C.P.R. forecast of operating expenses of \$430,809,000 for 1953 and placed undue emphasis on the significance of wage increases since September 1, 1952. The C.P.R. should submit proof of the amount of saving from the modernisation of equipment and the use of diesels.

Charging the board with ignoring the effect of the increase on producers, consignors, consumers and the national economy, the petition asks the Governor-General-in-Council to direct the board to undertake its own investigation of C.P.R. revenues for 1953, taking into account that certain transport revenue is currently listed under other income. The board should determine by how much the C.P.R. 1953 forecast should be reduced and ask the railway for evidence on reductions in operating expenses resulting from modernisation.

C.N.R. 1953 Estimates

The Canadian National Railways have made a preliminary estimate of a 1953 surplus of \$400,000, but point out factors that may throw the estimate out widely. The company, predicting its second peacetime surplus since 1928, forecasts record revenues and operating expenses of \$720,000,000 and \$676,600,000 respectively. The estimates take into account, however, neither the effect of the latest freight rate increase nor of a retroactive wage settlement reached in February, both running into millions.

Capital expenditure of \$130,000,000 is contemplated. Some of this total has been voted by Parliament in previous years, some will come from C.N.R. reserves, and some will be new money sought from Parliament. The Sherridon-Lynn Lake branch in Manitoba, authorised in 1951, is estimated to cost \$2,758,000 in construction. Another \$6,580,000 will be spent this year on the Terrace-Kitimat branch in British Columbia. Motive power orders to be financed this year include 50 diesel locomotives. The company also asks permission to order this year, for delivery next year, another 46 diesels, about 4,600 wagons and 91 passenger units.

ARGENTINA

Diesel Service over New Line

A diesel car service has been introduced between Junín (General San Martín Railway) and Rosario (General Mitre Railway) over the connecting line recently built between Santa Isabel and Rastreador Fournier. For the moment, it will be operated twice weekly, the round trip being accomplished the same day.

New Sarmiento Railway Express

An express recently placed into service by the Sarmiento Railway between Primero de Marzo (Buenos Aires) and Toay is named "El Puelche" New

stock, built by Werkspoor, with Pullman-type seats in both first and second-class coaches, is used. Shower baths, electric heating, and individual fans are provided; the first class coaches have adjustable foot-rests.

The train covers the 610 km. in 10 hr. 30 min. at an average speed of 60 km.p.h. It is stated that similar trains will shortly be introduced between Buenos Aires and Tucuman over the General Mitre Railway. A representative of the Ministry of Transport present at the inauguration of the new train said that serious consideration was now being given to unification of the gauges of the railways.

UNITED STATES

C. & N.W. Train Stop Installation

The Chicago & North Western has installed an intermittent inductive automatic train-stop system between Chicago (Clybourn) and Wyeville, 235 miles, on its 406-mile main line between Chicago and St. Paul-Minneapolis via Milwaukee. High-speed expresses operated over this route include the streamline "Twin Cities 400."

The installation begins at Clybourn Junction, 2½ miles from Chicago; the line is quadruple for half-a mile to Deering, three-track thence to Wilmette (10½ miles), double thence to Clyman Junction (122 miles) and single from Clyman Junction to Wyeville (102 miles).

The lineside apparatus consists of an inductor unit at each automatic and interlocking main-track signal, mounted to the right of the track, in the direction of travel, on lengthened sleepers. The receiver is mounted on a journal box of the locomotive.

The equipment has been applied on 89 steam and 190 diesel locomotives, and two railcars. The total outlay was \$1,775,000. Annual maintenance is estimated at \$107,500. The project was planned and installed by the railway, and the train-stop equipment and new relays at the signal were supplied by the General Railway Signal Company.

SWITZERLAND

High Speed in Loetschberg Tunnel

During the past six years the permanent way in the nine-mile Loetschberg Tunnel on the Berne-Loetschberg-Simplon Railway has been completely renewed, and the rails of both tracks are now welded together for a distance of eight miles. This enables trains to pass through the tunnel at a maximum speed of 68 m.p.h., an acceleration effective from May 17, on inauguration of the summer timetable, fast trains traversing the tunnel in eight, as against the previous 13-14 min.

Last Mallet Locomotive Withdrawn

Electrification as from March 13 of the Saignelégier-La Chaux-de-Fonds metre-gauge line, as recorded in our April 3 issue, ended the useful life of the four last Mallet steam locomotives in Switzerland. These were built by Arnold Jung, of Jungenthal (Rhine-land) in 1902, and had retained for

more than half a century their original boilers; they were not fitted with superheaters. They had never been rebuilt or undergone any structural alteration.

Actually, they were the smallest and least powerful Mallet locomotives ever seen in Switzerland. Their wheel arrangement was 0-4-0 + 0-4-0, and their weight 24 tonnes each, and they did good service with trains of three to five vehicles on this line with its many sharp curves and gradients of 1 in 25. The line belongs to the system owned and worked by the Compagnie du Chemin de Fer du Jura.

FRANCE

Increasing Clearances for Electrification

With the installation of catenaries on the Valennciennes-Thionville line it has been found necessary to increase the clearance of a large number of tunnels and bridges.

Of the eleven tunnels on the lines to be electrified, nine will have to be altered. In five instances the rail level will have to be lowered throughout by 8 in. and in another two by 1 ft. The total length of these tunnels is some 7,000 ft. In the other two tunnels affected, the clearance will be obtained by cutting away part of the archwork.

Some seventy overbridges and flyovers require attention. The clearance of 34 will be increased by raising their supporting pillars as described in the December 26, 1952, issue; the rail level of seven will be lowered; in sixteen, girders will be removed or cut away and replaced by thinner girders; and four bridges will have a part of the arch cut away and rebuilt. In only nine instances will it be necessary to demolish the bridge completely and to rebuild it with the required clearance.

Wagon-Carrying Trailers

Because of large-scale drainage works undertaken by the Paris Municipality in the Port de Javel, a workshop handling metal turnings in the Saint Ouen dock area, which was rail-served, has been cut off from the S.N.C.F. for a period of some months. As there was a risk that some 1,500 tonnes of traffic monthly in and out of the depot would be lost to the S.N.C.F., it was arranged to place a wagon-carrying road trailer at the disposal of the firm to operate between Grenelle Station and the workshop. During the first fifteen days of this service some 850 tonnes were moved.

IRELAND

G.N.R. Easter Traffic

Provisional figures for passenger traffic carried by the G.N.R. into Dublin during the period from Maundy Thursday to the following Saturday of Easter week show that there was an increase of between 9,000 and 10,000 passengers conveyed over the corresponding period in 1952.

In the ten-day period it is estimated that 22,000 passengers arrived in Dublin from the North, Dundalk, Drogheda, and other places.

PUBLICATIONS RECEIVED

Higher Industrial Production with Electricity. Electricity and Productivity Series, No. 1. London: The British Electrical Development Association, 2, Savoy Hill, W.C.2. 9 in. × 5½ in. 146 pp. Price 9s. This is the first of eight books dealing with industrial applications of electricity to be published by the British Electrical Development Association. The aim of the series is to encourage the use of more and improved machines powered by electricity to assist industry in meeting foreign competition while maintaining current British levels of wages. The present book is introductory and in its nine chapters surveys subjects such as factory electrical installations, electric motors and control gear, lighting for production, and various other forms of electrical equipment. It is fully illustrated with photographs and diagrams.

L'Année Ferroviaire, 1953. Paris 6e.: Editions Plon, 8 Rue Garancière. 9 in. × 5½ in. 176 pp. Illustrated. Paper covers. Price 690 fr.—The second, statistical part embodies traffic and other statistics of the French National Railways and other systems in Europe, also in some other countries. There are useful reviews of S.N.C.F. mechanical engineer and other activities in 1952; the former includes brief descriptions of diesel and the Renault gas turbine locomotives. This portion of the book shows the efforts made and achievements of the S.N.C.F. in giving better service and obtaining greater efficiency. The first part consists of essays. Monsieur André Siegfried discusses the function of railways in modern civilisation. Three officers of the S.N.C.F. write lucidly on their own spheres: Monsieur R. Dugas, Directeur des Etudes Générales, discusses the problem of and results attained in coal and mineral traffic; Monsieur O. Leduc, Ingénieur en Chef à la Direction des Installations Fixes, briefly describes modern French permanent way; and Monsieur Garreau, Chef de la Division des Etudes de Traction Electrique, contributes some stimulating reflections on 50-cycle traction.

Electrical Equipment for Industry.—Three new publications from the Brush Electrical Engineering Co. Ltd. deal with switchgear and power drives for industry. Publication No. 41166, describing a 33/38.5 kV. outdoor circuit-breaker, includes particulars of a new energy-storing device for its operation. By this means, five circuit-breaker closing operations can be performed without recourse to local a.c. supplies or requiring large storage batteries. Its basic element is a pneumatic accumulator of a type which has been employed for many years for impulse starting of heavy diesel engines. Publications 41002/1 and 11002 deal respectively with metalclad switchgear for ratings up to 1,200 amp., 15 kV., and with induction motors from 1 to 80 b.h.p.

Electric Motors and Generators.—Higgs Motors Limited has published an abridged list giving, in tabulated form, particulars and prices of a wide range of industrial a.c. and d.c. motors. Notes on the generators supplied by the company are provided in similar form, together with particulars of motor starters and shunt field rheostats for d.c. generators.

Diesel and Electric Locomotives.—Essential features of the more recent diesel and electric locomotives built by the Vulcan Foundry Limited are included in an illustrated booklet issued by the firm. Types included are the 1,600-h.p. diesel-electric locomotives, the 3,000-h.p. electric locomotives, and the 600-h.p. diesel-electric locomotives built for the Egyptian State Railways, the Santos-Jundiahy Railway and the Tasmanian Government Railway, respectively. The locomotives were built in conjunction with the English Electric Co. Ltd. A brief description of each, giving the salient points, are included, together with illustrations showing the locomotives under construction and in service. Diagrams of each type are also included.

Timber and Fire Protection. Published by the Timber Development Association Limited, 21, College Hill, London, E.C.4. 40 pp. 7 in. × 4½ in. Paper covers. Illustrated.—This booklet is a complete revision of "The Fireproofing of Timber," and includes much additional information. It emphasises the low thermal conductivity of wood, responsible for the surface only of timbers being charred and for the small proportion of heat penetrating into the wood. Graphs show the relative fire-resistance of timbers of various sections, aluminium alloy and mild steel; untreated timber 1 in. thick has at least equivalent resistance to unprotected steel or aluminium, and in greater thicknesses it is superior. The behaviour in fire of various species of timber is dealt with in an appendix in six classes according to their natural fire resistance. There are two main methods of fireproofing: (1) impregnation with a solution of chemical salts, and (2) surface coating with fire-resisting paint; the processes appertaining to either method are described.

Steel Companies' Progress Reviewed.—The United Steel Companies Limited has issued its annual illustrated report for employees reviewing the activities of the constituents of the group. Represented among the illustrations are rails being rolled at Workington, and a 275-h.p. diesel-electric locomotive built by the Yorkshire Engine Co. Ltd. A coloured illustration on the cover shows plate rolling in the 10-ft. plate mill at the Appleby-Frodingham Steel Company Works. The report records improved productive capacity in most departments, and gives a brief explanation

of the financial results and details of the application of the sums available. A coloured chart shows the proportions of the output from the various constituents going to different industries. Railways and rolling stock manufacture and repair absorb 27.7 per cent from the Workington Iron & Steel Co. Ltd., 13.4 per cent from Steel, Peech & Tozer Limited, and 8.7 per cent from the Appleby-Frodingham Steel Co. Ltd.

Aluminium Sheet Products.—The Northern Aluminium Co. Ltd., of Banbury, has published a booklet entitled "Noral Sheet Products—Part I," which gives the size limits and manufacturing tolerances of Noral sheet and plate. This information was previously contained in a publication that has been out of print for some time, the "Noral Handbook, Section 3." Manufacturing limits have since been considerably extended, and the new book has been produced to provide current data in a convenient form.

Painting Practice for Aluminium. London: The Aluminium Development Association, 33, Grosvenor Street, W.1. Price 2s. Bulletin No. 20 issued by the Aluminium Development Association consolidates information on advances made in the painting of aluminium since publication of Bulletin No. 13 (Surface Finishing of Aluminium and its Alloys). The publication opens with a survey of practice showing that in general the painting of aluminium mainly follows established principles with certain modifications to suit the particular material. Subsequent sections deal with cleaning and de-greasing, pre-treatment where necessary, choice of painting system and the re-painting of small and large components and structures.

German Federal Railways Advertising Literature.—The comprehensive publicity of the German Federal Railways includes a copious literature—none of it, incidentally, in Gothic type—in the form of booklets, leaflets, and postcards designed for varieties of railway user. For the younger travelling public there is the "Kleine Kursbuch-fibel" ("Small Timetable Primer"), which imparts the elements of timetable reading in 20 pages enlivened with diagrams and coloured sketches; it is only fair to the *Ämtliches Kursbuch* to say that *Bradshaw* needs a textbook twice as long. A folder "Safe to Berlin" describes the passport and currency regulations for railway travellers to that city from Western Germany, with information on fares and baggage. Literature for consignors includes a 40-page booklet with diagrams and photographs, giving details of the various types of wagon, container, and wagon transporter, and ways of handling awkward loads. A leaflet in French, presumably for consumption abroad, features *Bundesbahn* containers.

A New Method of Burning Firewood in Steam Locomotives

Recommendations, and results of tests on Vietnam Railways

By J. van Stappen, Secretariat, Economic Commission for Asia & the Far East

THE abundance of firewood in many countries of Asia and its possibilities as a fuel-substitute for oil and coal saving foreign exchange have prompted two United Nations organisations, the Economic Commission for Asia & the Far East (E.C.A.F.E.) and the Food & Agriculture Organisation (F.A.O.) to undertake through its secretariats a joint study of the use of firewood in steam locomotives. The study, which began in 1950, has now been completed and its findings were presented to the inland transport committee of E.C.A.F.E. in Bandung, Indonesia, earlier this year.

Some observations on the availability of firewood may be useful before discussing firing techniques. One of the peculiarities of many of the large tropical forests of Asia is that their timber is frequently of poor quality. It may often happen that only one tree per acre on an average will be found usable for commercial timber, while the remaining trees can only be used as firewood.

If, however, selected felling for firewood is carried out, saplings of more valuable species may grow up in the clearings under proper forestry attention, and poor forests may be turned into valuable assets. A good market for the firewood is essential for the success of this process. Depletion of forests through extensive use of firewood has to be feared only if extraction is done through local contractors without sufficient supervision of forestry services. Contractors working without mechanised equipment and with primitive means of transport find it easier to cut in the areas close to highway and railway, and often work these forests to death while the forests away from the lines of communication remain untouched.

Firewood—the only renewable source of fuel in the world—cannot only be obtained from existing forests, as mentioned, but also from firewood plantations where quick-growing species are cultivated in a four- to ten-year rotation process also, rubberwood can be obtained at very little cost from over-age trees which the local rubber plantations have to dispose of in any case. This practice can be observed on the Deli Railway in Sumatra.

Present Practice

The United Nations study, which drew extensively on the co-operation of forestry services and railway administrations throughout Asia, shows that present practice in the use of firewood for steam locomotives favours firewood in billets 2-3 ft. long and 3-6 in. in diameter. The brick arches in the firebox are usually removed lest they be damaged by the billets. The firebox is

loaded up fully, probably because it is felt that ample firewood has to be burned to raise enough steam. The result of this firing practice is that little space is available in the firebox for combustion of the gases; moreover, the gases are drawn straight into the tubes and the radiant heat remains small. No evidence could be found that any railway uses firing techniques similar to those used during the test runs on the Vietnam Railways, described later.

Wood is generally considered a second-rate fuel. Railwaymen have no particular liking for it in view of the difficulties of obtaining it, firing with it and storing and refuelling.

Complaints are made that firewood is bulky and frequent refuelling is required, and the stacking of billets on the tender requires particular attention to enable the loading of the largest possible quantity of the fuel into the available space; further considerable delays in refuelling are thus caused. It is said that firewood reduces the steaming capacity and consequently the optimum train loads. Flying sparks from the chimney are said to set fire to the train and objects near the line and droppings from the grate to burn sleepers and start fires in the ashpan.

The most serious complaints are made as a rule by officials of coal-burning railways where firewood is used only in emergencies, as during a war. On the other hand many of the complaints, especially those of sparking, are never heard on railways where firewood is used as an exclusive fuel. The fact that the State Railways of Thailand do not fit spark arrestors to their wood-burning locomotives does not stop Thai farmers from drying their rice along the railway embankment during floods, a clear indication that the risk of sparks cannot be too serious.

Theory of Wood-burning

The study indicates that in the initial stage a considerable effort has been made in an attempt to understand what happens in the firebox during the process of burning firewood. A few facts relating to the behaviour of wood in a locomotive firebox are as follow:

(a) Wood contains free oxygen, part of which is not chemically bound and improves the speed of burning and diminishes the air necessary for combustion.

(b) A layer of a few inches of incandescent carbon suffices to consume all the oxygen in the air under normal draught. A thicker layer of glowing carbon will add another atom of carbon to the carbon dioxide, converting it into carbon monoxide. This carbon monoxide is added to the volatile combustibles distilled from the fuel in phase two, and additional air for complete

combustion of all gases must be introduced above the fuel bed. As the ignition temperature of these gases is approximately 1,100°F. or higher, the over-fire air should, if possible, be preheated to ensure ignition and be introduced in such a manner that it will be thoroughly mixed with the gases. The amount of air to be supplied over the fire forms a substantial part of the total amount of air necessary for combustion.

(c) When the fixed carbon is burnt to carbon monoxide (CO) instead of carbon dioxide (CO₂), 70 per cent of the heating value is lost. The admission of secondary air will burn the CO to CO₂ and will reduce the necessary free grate area.

(d) Enough space should be available to mix the air with the gases and to obtain complete combustion. If the firebox and the flame box are too small to give the gases time for complete combustion, important losses by unburnt gases and soiling of chimneys and boiler tubes cannot be prevented. If possible, the flame should not burn in the fire tubes.

(e) The distillation products of wood contain heavy tar-forming hydrogen compounds, which have a slow burning speed. When not burnt in the firebox, they may soil the tubes because the cold tubes walls may reduce the gas temperature of these compounds to below the ignition point.

(f) Wood starts to produce gases at a very low temperature (340°F.). Charcoal burns at a lower temperature than coke, which explains the high burning speed of fuelwood.

Pieces of wood tend to burn first and more fiercely at the crosscuts; shorter billets should therefore increase considerably the speed of burning.

Application of Theory

The United Nations study, after reviewing current practices and complaints in the light of the facts mentioned above, arrived at the following recommendations for improvement of present-day methods:—

(1) To increase the steaming capacity of the boiler or to ensure that enough fuel is burned in a certain period of time, billets should be short, far shorter than two or three feet.

(2) The free grate area should be smaller than that of coal burners; narrow slits will prevent sizeable pieces of fuel from dropping into the ashpan, where they would create trouble. (The Deli Railway established the free air passage at 21 per cent of the total grate area.)

(3) A brick arch is essential for more complete combustion and for lessening sparking.

(4) Secondary air is essential to achieve complete combustion. It can

probably best be introduced through heavy walled pipes of 3 in. diameter, replacing stay bolts located directly under the brick arch near the tube plate. Induction of secondary air through openings in the firedoor is also feasible; the air stream should then be turned into the direction of the fire.

(5) A low firelayer is desirable to create space in the firebox, to achieve more complete combustion, and to equalise the draught on the fire.

Tests

The above recommendations have been tried out on several railways in Asia. Mr. Corneize, Chief Mechanical Engineer of the Vietnam Railways, who had five years' experience as locomotive testing engineer on the French railways, undertook thirty-four test runs with various types of wood of different billet lengths. The test runs included some with coal and coal briquettes so as to establish the amount of wood equivalent to one ton of coal.

The following table shows the average results of these tests:—

Type of wood	Length of billets in in.	Use of firebrick arch	Use of secondary air	Tons of firewood equivalent to 1 ton of Indian coal (11,700 B.T.U.)
High forest	32	No	No	5.0
Rubber	32	No	No	5.1
High forest	16	No	No	3.8
High forest	16	Yes	No	3.4
High forest	8/4	Yes	No	2.3
High forest	4	Yes	No	2.35
High forest	6	Yes	Yes	1.7
Rubber	6	Yes	Yes	1.8
Pine	6	Yes	Yes	1.7

In the tests with 6 in. billets the firelayer did not exceed a height of 10-12 in. and steam production was good, even on a long gradient of 1 in 125. Firing was done regularly with a coal shovel with slightly raised sides, the colour of the fire remaining constantly red to white hot on top, with excellent radiance. Secondary air was induced through the firedoor and there was no change in the Kylchap blast pipe arrangement.

Consumption figures similar to those of the Vietnam test runs were obtained in a few test runs made on the Eastern Bengal Railway, with "YB" and "WD" metre gauge engines. A test train of 17 coaches (two above maximum) was hauled well within the time schedule of regular mail trains.

As the engines used had no spark arresters and railway officials felt that too much sparking was encountered, further tests are to be made in Pakistan to eliminate this difficulty.

The United Nations study has brought out the following points:

(1) The test runs have provided clear evidence that all recommendations derived from the theory of wood burning can be put into practical use and that wood is a much better loco-

motive fuel than is generally contended.

(2) Many railways which burn wood along conventional lines will be able to achieve important economies in fuel when they adopt the new method.

(3) The Vietnam Railways have recently abandoned the use of coal and will use firewood exclusively in the future. This step is expected to yield a saving of £175,000 in 1953.

(4) The fact that even the very light rubber wood can be used satisfactorily for steam locomotives refutes the contention that only heavy wood is suitable as locomotive fuel.

(5) The unstacked small pieces of wood do not take appreciably more space than stacked billets of greater length.

(6) One of the main advantages of using smaller pieces of wood and a low firelayer is that the firebrick-arch is kept out of danger from damage by heavy billets thrown in.

(7) The time required for refuelling can easily be reduced by 80 per cent if small pieces of firewood are used and if the loading is done from bins above the track or from high platforms.

(8) On railways which have used firewood exclusively, firemen will have to become used to the shovel practice. They will probably object to this practice until the skin on their palms and fingers hardens sufficiently.

(9) Firewood can apparently be obtained best in lengths of three feet or longer and then be sawn up mechanically at the refuelling points. The loss in sawdust is insignificant compared with the economies achieved.

(10) Preliminary tests may be carried out without having to wait for the casting of a new grate. It is sufficient to build the woodfire on a layer of cinders.

Sparking

Special attention was given during the tests to the problem of sparking since serious misconceptions seemed to exist on this point.

Lack of faith in the steaming qualities of wood has led to attempts to "make the engine steam" by introducing sharper blast pipe action, and insufficient attention has been given to the fact that the long billets stacked high up in the firebox easily produce holes in the fire with excessive local draught conditions. Pieces of burning wood may be sucked from these holes directly into the tubes and it may be contended that it is very difficult to stop sparks once they have entered the smokebox. That "sparking should be fought on the grate and in the firebox, and not in the smokebox," would appear to be a sound principle.

The main requirements to combat sparking is an even draught obtained from a soft blast pipe action; use of brick arch; a large gas volume in smokebox and firebox and modern exhaust arrangements.

If the need for a spark arrester still exists, the American "Master Mech-

anics Front End" would appear suitable. According to the latest reports received from the Vietnam Railways, sparks can be stopped by a $\frac{1}{8}$ in. opening mesh spark arrester with a very thin 0.04 in. wire. In this case the spark arrester should be as large as possible; it need not be concentric with the heart of the blast pipe and the part confronting the tubes can be solid plate over 90° to deflect the sparks leaving the tubes to either side of the smokebox.

Whether firewood can be used for steam locomotives depends mainly on the prices of wood, coal, or oil, and transport cost. On the basis of the test runs of the Vietnam Railways, the United Nations study gives an estimate of the cost of firewood in various south-east countries of Asia in terms of percentages of the cost of coal for the same performance. The prices of firewood and coal used in the estimate were supplied by the different railways in 1950-51; they include the cost of handling. The percentages are: Thailand 23 per cent; Burma 25 per cent; Cambodia 32 per cent; Sumatra 37 per cent; Ceylon 56 per cent; Viet-Nam 61 per cent; Pakistan (East) 71 per cent; Malaya 75 per cent.

The above figures are favourable for firewood though a few points have to be considered. First of all, transport costs of wood may have been under-rated, while on the other hand political unrest in various countries has added considerably to the prices of firewood. It should also be pointed out that in none of the countries mentioned above does there exist a well-organised long-term procurement plan, directly supervised by the forestry services, which would be essential to ensure a constant supply of firewood over a long period of time at low prices.

To sum up, substitution of wood for coal appears to be more feasible than is generally believed and greater attention to the problem of firewood may prompt railway administrations to consider firewood for steam locomotives before deciding on the introduction of diesel engines, especially where oil and coal are expensive, while firewood is available in relatively large quantities.

A.R.E.A. ANNUAL CONVENTION PROGRAMME.—The American Railway Engineering Association held its annual convention in Chicago on March 17, 18 and 19 under the presidency of Mr. C. J. Geyer. The programme included the reports of the 22 standing committees and addresses by the President, and on the following subjects by eminent speakers: "Planning is Always in Season"; "Research Review"; "Improved Transit Time for Freight Shipments"; "The Manpower Situation"; "Two Essentials of Engineering Science, Mathematics and Agreements"; "Tests on Waterproofing Coatings for Concrete Surfaces"; "Hand and Spirit"; "Controversial Issues" (in wood preservation); "Reducing Maintenance Man-hours"; "Earthquake Damage and Repairs"; "Progress in Crosstie Research Project"; "Prolonging the Life of Ties through the use of Pads vs. Hold-down Fastenings"; "Rail Problems in Moffat Tunnel"; and "Rail Failures and Shelley Rail Investigation."

Rerailing after Shawford Accident, Southern Region

Haulage up ramp track by means of winch fitted to bulldozer



Photo

[S. C. Townroe]

The locomotive at the foot of the embankment after the derailment

WHEN the 3.24 p.m. train, Southampton Central to Waterloo, became partly derailed at Shawford, near Winchester, on July 20, 1952, it entered a sand drag at the terminating point of the local line with considerable momentum. The seven coaches of the train remained upright and there were no casualties, but the engine and tender ran through the sand drag and were precipitated down the embankment, which at that point consisted of chalk filling overlaid with ash tipping. The Ministry of Transport report on the accident was summarised in *The Rail-*

way Gazette of January 30. The locomotive involved was "Lord Nelson" class No. 30854, *Howard of Effingham*; the engine weighed 83 tons 10 cwt. in working order, and the tender 56 tons 14 cwt. After the mishap the engine lay on its side away from the railway, a distance of 50 ft. from the nearest running line and 15 ft. below rail level, with its tender on the side of the bank. The tender was recovered by the Eastleigh 36-ton steam crane, but the engine was beyond normal reach of breakdown cranes.

The summer traffic was at its peak,

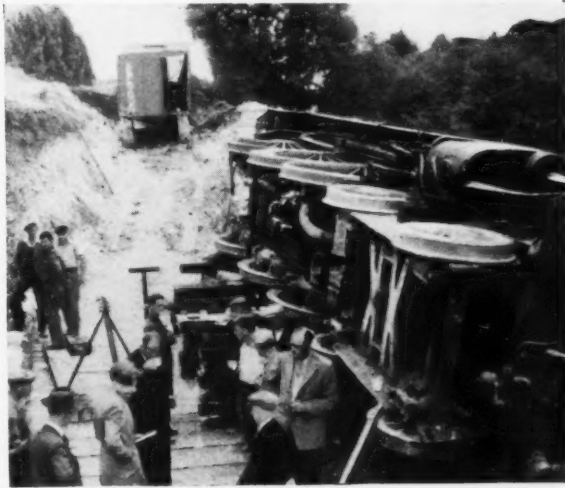
and it was decided to find some means of recovering the engine without any interruption to the train service on the busy main line between London and Southampton Docks, and the Hampshire and Dorset coast resorts. It appeared possible to achieve this by constructing a sloping track down to the engine on the side of the embankment, and to turn the engine upright on to the lower end of the temporary track. The scheme for carrying out this work was prepared jointly by the District Engineer and District Motive Power Superintendent, Eastleigh, and on receipt of Headquarters' approval the work was begun four days after the mishap.

In the initial preparation of the site, a mechanical excavator was used to remove material between the bank and the wheels of the engine, in order that a platform constructed of cross timbers could be laid 4 ft. 6 in. below the lower wheels of the engine, to provide a firm bed upon which to turn it upright. Loose earth was then removed from underneath the lower wheels in order to give the engine freedom to roll towards the vertical, and three jacking points were prepared on the lower top side of the boiler. When the platform had been completed, two lengths of rail were lashed to each row of bogie and coupled wheels, the flanges of the wheels lying in the web of the rails, so that in whatever position the engine came upright on the timber bed, there would be rails beneath it, which could be connected to the temporary track.

No attempt was made to strip the engine to lighten it, apart from the removal of the brake gear, footsteps, and injectors. On July 30, ten days after the mishap, the Eastleigh Motive



Photos



[S. C. Townroe]

Clearing earth between engine and embankment with excavator (left); and preparing pit and slope for temporary track up which the locomotive was hauled back to the running lines (right)



Photo]

[S. C. Townroe

A view of the locomotive being rolled up on to the platform, with rails lashed to its wheels in readiness for connection to the ramp track

Power Breakdown Gang set the engine upright, using three Duff Norton 35-ton jacks, and a plentiful supply of timber packing: this operation took four hours. The engine rolled gently on to its lower wheels within the first hour, and it finally settled upright on the platform with only slight impact, and in correct alignment for subsequent operations.

After the bed for the engine had been completed, the mechanical excavator was supplemented by a bulldozer in order to prepare the slope for the temporary track, which was laid on a gradient of 1 in 13 over a length of 240 ft. from the engine. This involved a considerable clearance of bushes and trees. At its upper end the track was to be connected to the sand drag extension of the up local line. To avoid excavating too close to the running lines, however, the temporary track was slightly offset, and the actual connection

to the up local line involved the slewing of a short portion of the latter. This was done during a short possession after dark, when the engine had been drawn up to the top of the bank. In the preparation of the site the District Engineer employed, in conjunction with the two mechanical appliances, one spare gang of six men and a gang of six Italian labourers.

At 8 a.m. on the morning after the uprighting of the engine, the breakdown gang began to draw the engine to the top of the gradient, with a set of Kelbus hauling tackle. A feature of this operation was the use of the winch fitted to the International 90-h.p. diesel-engine bulldozer, which proved powerful enough to operate the hauling tackle, at a speed that could be controlled to a nicety. The bulldozer was located at the top of the bank in a fixed position, and the Kelbus gear was anchored at progressively higher positions on the

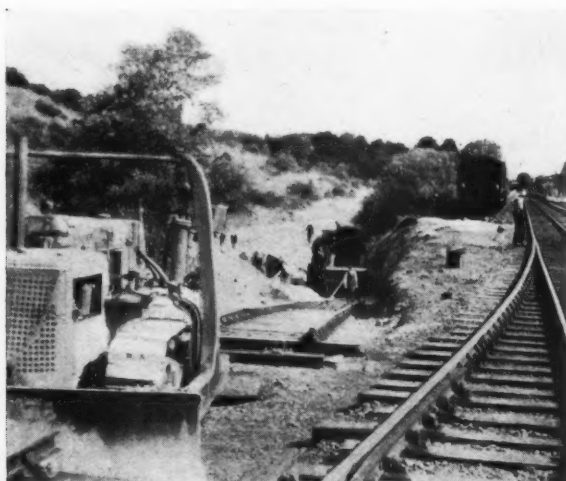
temporary track. The engine was hauled a distance of 20 ft. at each stage. It was not necessary to use a locomotive for hauling purposes on any of the running lines. During the intervals when the hauling tackle was being re-anchored, the engine was held on the gradient by scotches without difficulty.

Because of soft ground on which the engine had fallen at the time of the accident, it had sustained very little damage, and the coupling and connecting rods were not removed before the hauling operations. All compression valves and cylinder release cocks were, however, taken off, and all motion parts were lubricated.

The hauling operations were completed by 6 p.m. the same day, by the 12 members of the breakdown gang, in conjunction with the Engineer's staff, and the engine was finally transferred to the up local line during the evening; thus, eleven days after the mishap, the engine was recovered and hauled to Eastleigh Works. The operations were favoured by fine weather.

HEAVY ELECTRICAL EQUIPMENT ON SHOW.—An on-load tap changer for use at the 132 kV. terminals of a 120 MVA., 275/132 kV. three-phase auto-transformer is a predominant feature on the stand of the Metropolitan-Vickers Electrical Co. Ltd. at the B.I.F. Twenty-four of these tap-changers are being built for use with Metrovick transformers in the B.E.A. Super-Grid, and a further 45 tap-changers have been ordered for transformers being supplied by other manufacturers. Among other exhibits, numerous items of control gear are being shown.

KIRKNEWTON STATION CLOSURE.—Facilities provided at Kirknewton Station, N.E. Region, having been maintained at a financial loss, it was necessary to withdraw them and close the station on and from Monday, March 30. Parcels traffic is now dealt with at Wooler, from which point a collection and delivery service is operated by British Railways motors. Full wagon loads of goods traffic not requiring cartage and livestock traffic are dealt with at Akeld.



Photo



[S. C. Townroe

Bulldozer with winch coupled to Kelbus gear (left); locomotive drawn 240 ft. to top of 1 in 13 slope (right)

New Severn Bridge at Over Junction, Western Region

The 35-ton main girders of the new spans launched with a single 45-ton breakdown crane



Ball-bearing turntable, with three rollers to receive the wide base of the extension nose girder

THE new bridge on the main line of the Western Region from Gloucester to South Wales crossing the western channel of the River Severn at Over Junction, west of Gloucester, is nearing completion. It is situated immediately downstream of the original bridge built by Brunel, which it is replacing. A short, illustrated description of the old bridge, with some details of its successor, appeared in our May 4, 1951, issue.

The new bridge will have three 71-ft. mild steel, right-hand skew girder spans over the waterway and one 15-ft. reinforced concrete span at each end. The longer spans are of through-type construction with two main girders 81 ft. long spaced at 25-ft. centres. Cross girders carrying a solid concrete deck are supported on precast reinforced concrete jack arch units, resting on concrete skewbacks which are cast on the bottom flanges of the cross girders.

Alignment of Bridge

The new alignment of the bridge is close to the existing tracks at the Gloucester end and diverging from them at the right bank of the river. Although the girders for the span near the Gloucester end could be lifted directly off wagons standing on the down line on the old bridge, the distance between the old and the new bridges was too great for this procedure to be adopted for erecting the girders for the other two spans.

Erection of the girders began from the west end of the bridge on November 25, 1952, when the main girders for the first span were set in position on their knuckle bearings. Each girder weighed 35 tons and the first to be launched, the

downstream girder, was fitted with an extension nose girder weighing some 2½ tons, increasing the length to 108 ft. Tracks were laid over the approach, and a 45-ton breakdown crane, standing on the down track at the end of the reinforced concrete approach span, lifted the girder off wagons on the up track and swung it out over the water until the nose girder landed on rollers mounted on a ball-bearing turntable on the far pier.

The load of 35½ tons was beyond the capacity of the crane when working at the radius that would have been necessary to handle the girder in a single lift into its final position. With the nose girder on the pier and the main girder supported some 25 ft. from its other end on the approach span, therefore, the lifting "nips" were moved further along the girder before another lift was made by the crane, and the girder was launched forward on the rollers under the nose girder. This process was repeated until the whole of the nose girder



Initial lift of girder-cum-nose. Stage 1: Lifting from wagons before slewing



Initial lift, stage 2 : Slewing completed and girder-cum-nose poised ready for lowering. Note the wide base of nose and banjo wires strained from transverse beam to keep it straight during subsequent rolling over turntable

projected beyond the pier and the main girder spanned the opening, square to the piers. A final lift at the "tail" enabled the girder to be swung round and lowered on to the knuckle bearing at that end. At the far end, jacks lifted the girder clear of the turntable, which was withdrawn and the girder lowered on to the bearing on the pier.

Launching Upstream Girder

The upstream girder was launched in a similar manner, though in this instance it had to be worked across the opening on the skew, necessitating the use of a 36 ft. 6 in. long nosing girder weighing three tons, thus increasing the combined length of the "lift" to 117 ft. 6 in.

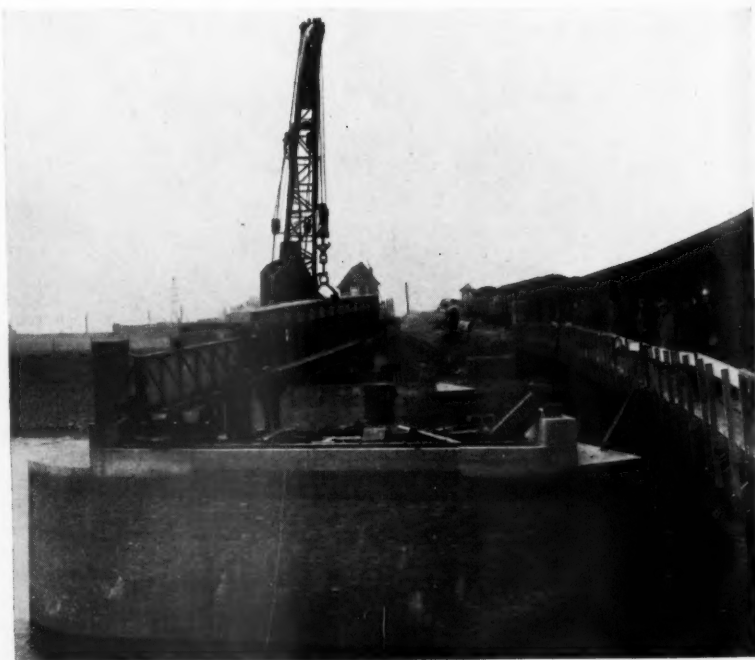
The nosing girders were bolted to the ends of the main girders and were provided with a framework of steel channels level and parallel to the bottom flanges so as to increase the width of the temporary bearing on the turntable. Banjo wires strained over a steel joist set at right angles to the girders ensured that they were held in line during the launching operation.

On completion of the erection of the cross girders of the first span, temporary tracks were laid across that span, and, with the crane standing on the far end, the girders for the second or middle

span were launched in the same way, on January 15.

The girders for the third span were unloaded from wagons standing on the down line on the old bridge. In this operation, the girders were handled with two cranes, one standing on the second new span and the other on the concrete span at the Gloucester end of the bridge. The launching of the 81-ft. girders of the first two spans with a single crane having a capacity for handling a 45-ton load at a radius of only 20 ft. was only possible by using a nosing girder, but their installation was remarkable because of the small quantity of special equipment required for the operation, namely the nosing girders and the turntable.

The erection of the steelwork was carried out by the Fairfield Shipbuilding & Engineering Co. Ltd., Chepstow, which also contracted for the supply of all girderwork. The nosing girders and the turntable were also lent by this firm. The crane used was a Western Region standard 45-ton breakdown crane from Swindon worked by railway staff. The erection scheme worked out by Mr. C. R. Shackle, the Resident Engineer, was carried out under the instructions of Mr. M. G. R. Smith, Civil Engineer, Western Region.



Initial lift, stage 3 : Lowering completed, with nose on turntable ready for launching forward over its rollers

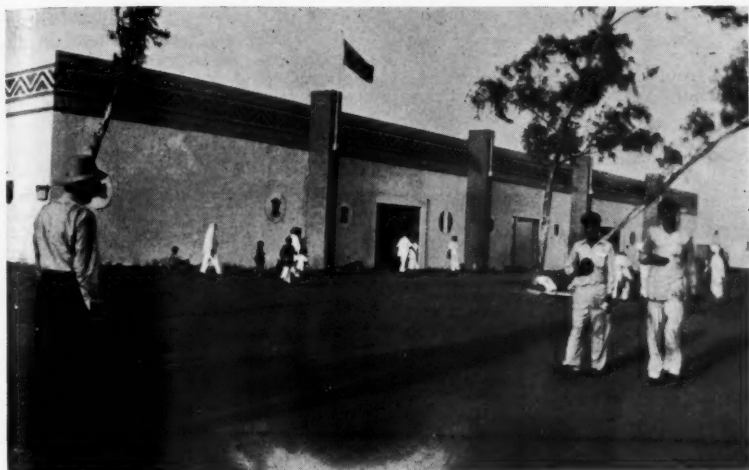
EMERGENCY LIGHTING SUPPLIES.—Automatic emergency lighting apparatus operating with a battery of 14 P & G. Closed Top cells of 30 Ah. capacity is being shown at the British Industries Fair by Pritchett & Gold and E.P.S. Co. Ltd. The charging and control gear is housed in a sheet steel

cubicle and arranged so that an interruption in the mains supply automatically and instantaneously connects the emergency lighting circuit to the battery by means of a change-over contactor. The company's "NT" type train lighting cells in Dagenite boxes are represented by an exhibit

in section. The portable battery display consists of aircraft batteries, a heavy duty bus battery, and examples of Dagenite car batteries, all embodying plate separators of Porvic, a microporous plastic material completely immune to oxidation and acid attack.

Indian Railways Centenary Exhibition

Consistently high attendances lead to exhibition period being extended a month



[Photo]

[R. A. Powell]

One of the two Foreign Manufacturers' pavilions at the exhibition. All British exhibitors were represented in the building illustrated

ALTHOUGH it had been proposed originally to close the Indian Railways Centenary Exhibition at New Delhi on April 16, the keen public interest aroused led to the decision to extend it until May 17. This longer period will enable many more from universities and schools to visit the exhibition during their holidays, and so further the educational aims on which emphasis has been laid by the organisers throughout. Lavish use of working models is a feature of the exhibition which has been particularly attractive to younger visitors.

Attendances have been continuously high, with peak numbers at weekends, when on one Sunday over 50,000 visitors attended. The exhibition is open from 3 p.m. until 11 p.m., though it is perhaps seen to the best effect after dark, thanks to an ingenious system of

general floodlighting and local illumination. The work of preparing the desert site and maintaining it in a condition of scrupulous cleanliness and tidiness day after day, in spite of the large crowds attending, has been carried out with an efficiency that has been much appreciated and commented on by visitors.

One of the two pavilions exhibiting products of foreign manufacture is illustrated. All the British exhibitors were represented in this building, while suppliers from other countries of railway equipment for India were distributed among the two pavilions. An account of the British exhibits was given in our March 13 issue. In other illustrations on this page and the next it will be noticed that open-air exhibits of rolling stock are drawn up on railway tracks alongside specially-built platforms of standard height, from which visitors

have convenient access to the interiors of the vehicles.

Indian practice in modern main-line rolling stock construction is represented by an air-conditioned vehicle built at Matunga, which was specially fitted up for the exhibition with each compartment finished in a different style of decoration and colour. The covers of the cases containing the air-conditioning equipment, supplied by J. Stone & Co. Ltd., are removed, and the apparatus specially painted and labelled to show its method of operation.

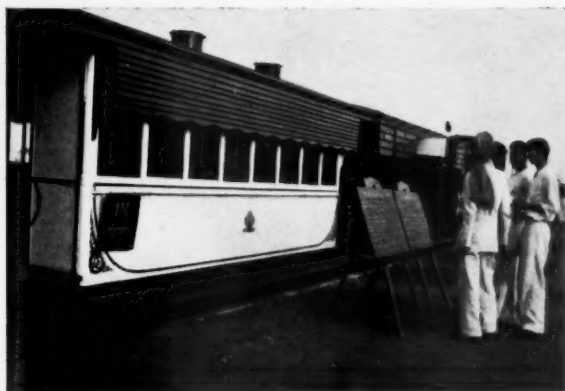
Rolling stock exhibits are not confined to passenger-carrying vehicles, but include a dynamometer car built for India by the Metropolitan-Cammell Carriage & Wagon Co. Ltd. in 1931.

Telegram of Congratulation

On the occasion of the opening of the exhibition and centenary celebrations, congratulations from Great Britain to the Indian Railways were expressed in a telegram sent by the Minister of Transport, Mr. Alan Lennox-Boyd, to the Indian Minister of Railways, Shri Lal Bahadur Shastri. Mr. Lennox-Boyd's message stated:—

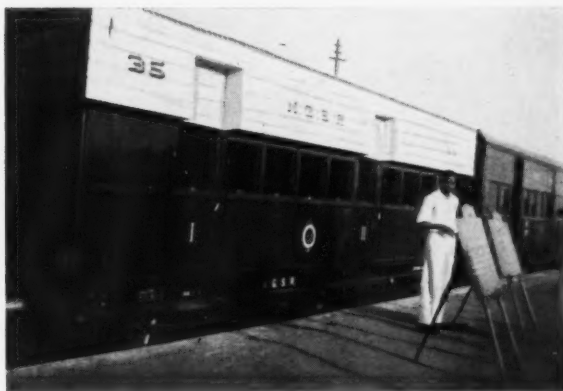
"India can look back with justifiable pride on the development of her great network of railways during the past hundred years. It is an achievement which is not surpassed and probably not equalled in any other country in the great Continent of Asia, and I can take especial pride in it because of the intimate part which men and machines from the United Kingdom have played in the story of Indian Railways. That story is most fittingly illustrated in the exhibition which is now being opened by your Prime Minister in New Delhi, and I send my most cordial good wishes for its very great success."

The Minister of Railways replied:—
"I thank you very much for your



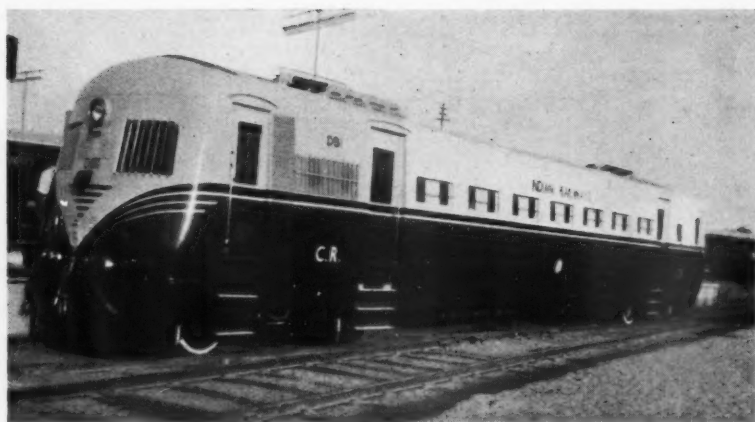
[Photos]

Prince of Wales saloon of 1875 next to a third class coach of the same date



[R. A. Powell]

A first and second class coach of 1887, the oldest still in service on Indian Railways



Drewry 84-seat diesel-mechanical railcar placed in service in 1940



Section of L.T.E. light alloy coach on the stand of the Metropolitan-Cammell Carriage & Wagon Co. Ltd.



[Photos]

All-steel lightweight third class coach built by Schlieren

[R. A. Powe]

good wishes on the occasion of the centenary of Indian Railways. We remember with pleasure the association of British personnel with this great undertaking during some 90 years and the efficiency and skill which they brought to bear on it. You will undoubtedly feel happy to know that we have tried to maintain that tradition and have also been able to considerably expand and develop our railways in various directions during the last few years. The centenary exhibition is an important milestone in the progress of Indian Railways which are planning even greater service to the country from year to year as the railways have to play a significant role in the future development of our country. We are greatly heartened by your congratulations and good wishes for our greater success."

PUBLIC DAY AND REUNION AT LONGMOOR CAMP.—This year is the fiftieth anniversary of the arrival of the first railway troops at Longmoor, Hants, now the Transportation Centre of the Royal Engineers. On Saturday, September 5, a public day will be held when the centre will be open to the public from 1.30 p.m. to 7 p.m. There will be demonstrations and exhibits representing the railway, port and inland waterways activities of the transportation service. A reunion which will include a dance will take place on the same day and there will be a church parade on Sunday, September 6.

CORONATION MAP.—Copies of an official free Coronation pocket map, published jointly by London Transport and the Metropolitan Police, have now been made available to the public. It shows the Royal route in seven colours, each corresponding to one of the seven official zones into which the route has been divided for transport purposes. Each zone is linked on the map with a panel in the same colour giving all bus, Underground and coach services for reaching it. The map contains details of the bus and Green Line coach routes serving the Coronation route and the sixteen special terminals to which they will run, a list of 160 Underground stations opening at 3 a.m. and stations near the route which will be restricted, and a map of the Underground. It is obtainable free at police stations and at London Transport station booking offices and at public inquiry offices.

FIBRES FOR HEAT INSULATION.—The Cape Asbestos Co. Ltd. has completed arrangements for the production of inorganic fibres from a natural rock, of which there are considerable deposits in Scotland. The firm of William Kenyon & Sons Limited, of Dukinfield, Cheshire, which has carried out extensive investigations into the manufacture and utilisation of this new product, will act as sole distributor of the material, which will be marketed under the registered trade name of Rocksil. Fibres manufactured from this indigenous material have a silken appearance, possess a very high tensile strength, and the long staples when made up into the form of mats offer a high resistance to the transmission of heat, cold and sound. The fibres can be produced to almost any degree of fineness and, in mass, assume an almost pure white appearance. They will withstand temperatures up to 1,400° F. and cover a very wide range of requirements.

RAILWAY NEWS SECTION

PERSONAL

Mr. Donald Gordon, Chairman & President, Canadian National Railways, arrived in this country on April 20 in the "Queen Mary" on a visit to Europe.

We regret to record the death on April 27, at the age of 66 of Mr. L. C. Glenister, Chief Accountant, London & North Eastern Railway, 1942-47.

Taranaki and Wanganui districts, also at Ohakune Junction, before entering the District Traffic Manager's office at Auckland in 1930. Between 1937 and 1940 he was stationed in the District Traffic Manager's office at Wellington on accounts duties, and also at Frankton Junction, where he was Assistant Relieving Officer. In 1945, Mr. Farr was promoted to Train Running Officer at Auckland, and last year he was made Senior Train Running Officer.

Mr. F. V. Bullen, A.M.Inst.T., who, as recorded in our April 3 issue, retired from the office of Comptroller of Accounts & Audit of the New South Wales Government Railways on January 31, 1953, after nearly 50 years' railway service. Mr. Bullen joined the Department in July, 1903, as a junior clerk in the Chief Accountant's Branch and, after a wide experience, he was appointed Assistant Comptroller of Accounts & Audit on



Mr. F. W. Cazneau

Appointed Comptroller of Accounts & Audit, New South Wales Government Railways



Mr. F. V. Bullen

Comptroller of Accounts & Audit, New South Wales Government Railways, 1941-53

Mr. F. W. Cazneau, Assistant Comptroller of Accounts & Audit, New South Wales Government Railways, who, as recorded in our April 3 issue, has been appointed Comptroller of Accounts & Audit, commenced his railway career in the Locomotive Accountant's Office in 1907, and transferred to the Chief Accountant's Branch in 1911. The designation of the Chief Accountant's Branch was subsequently changed to the Finance Branch and the title of the controlling officer to that of Comptroller of Accounts & Audit. After serving in several positions in the Accounting division, Mr. Cazneau was appointed Assistant Comptroller of Accounts & Audit in 1941.

Mr. E. F. Farr, who, as recorded in our April 3 issue, has been appointed District Traffic Manager, Christchurch, New Zealand Government Railways, began his railway career at Westport in 1916. He transferred to the North Island in 1923, and served at various stations in the

The following appointments have been announced by the Canadian National Railways:—

Mr. Chateauguay Perrault, Q.C., Assistant Counsel, Province of Quebec, for the Canadian National Railways, has been appointed Counsel for the Province, relieving Mr. Lionel Cote, Q.C., of the administration of the Quebec Law Department so the latter may devote full time to his system duties as Assistant General Solicitor.

Mr. Norman A. Walford, General Superintendent, Toronto, has been appointed General Manager of the railway's Central Region. He succeeds Mr. Reginald Hayes, appointed Assistant Vice-President, Operation, Montreal.

Mr. John W. Demcoe takes over the post of Superintendent of the C.N.R.'s Montreal Terminals and the St. Jerome Division at Montreal. He succeeds Mr. William H. Murray, appointed Superintendent of the Hornepayne Division.

October 1, 1936. He has been Comptroller of Accounts & Audit for nearly 12 years, being appointed to that position on August 11, 1941, following the death of Mr. W. J. Bubb.

The following administrative changes have been announced by the South African Railways Administration:—

Mr. J. A. Kruger, Administrative Secretary to the Minister of Transport, Pretoria, has been appointed Chief Superintendent (Operating), General Manager's Office, Johannesburg.

Mr. J. D. du Toit, System Engineer, Pretoria, has been appointed Inspecting Engineer (Maintenance), Chief Civil Engineer's Office, Johannesburg.

Mr. J. J. Kesting, Superintendent (Commercial), Pretoria, has been appointed a member of the South African Railways & Harbours Service Commission, with effect from April 13, 1953, in succession to Mr. J. A. Fourie.



Mr. Jean Scheerens
Conseiller à la Direction Générale,
Belgian National Railways



Mr. F. R. Murray
Appointed Assistant to General Manager,
New Zealand Government Railways



Mr. A. Evans
Appointed Transportation Superintendent,
New Zealand Government Railways

Mr. Jean Scheerens, Conseiller à la Direction Générale, Belgian National Railways, who, as recorded in our April 17 issue, has retired, was born at Nivelles in 1888. He entered the service of the Belgian State Railways as a clerk in 1907, and was employed in the headquarters of the Operating Department until the end of 1913, when he was transferred to that of the Staff Department, where he was promoted through the several grades. He was appointed Inspecteur Principal in 1937, Inspecteur en Chef in 1944, and in January, 1948, to the position from which he has retired, with the rank of Directeur. Mr. Scheerens holds the diploma of the Institut des Hautes Etudes de Belgique.

Mr. F. R. Murray, who, as recorded in our April 3 issue, has been appointed Assistant to the General Manager, New Zealand Government Railways, began his

railway career in 1922 as a Clerical Cadet at Christchurch, and later served at various stations in the North Island. In 1928 he was transferred to the Department's training school at Wellington, and a few months afterwards was posted to the General Manager's office. He was stationed at Longburn from 1933 until 1936, when he entered the District Traffic Manager's office at Wellington. On the outbreak of war in 1939, Mr. Murray became Assistant Wagon Supply Officer in the District Traffic Manager's office. In this post he was one of the large team of officers who were given the responsible task of making the rolling stock resources of the railways cope with the demands of a nation at war. Soon after his promotion to Train Running Officer in 1947, Mr. Murray was appointed to the Transportation Superintendent's office, where he was engaged on special duties. In November last he was promoted to

Senior Train Running Officer, and early this year was delegated to act as Assistant Transportation Superintendent.

Mr. A. Evans, who, as recorded in our April 3 issue, has been appointed Transportation Superintendent, New Zealand Government Railways, joined the railway service in 1916 as a cadet at Auckland. Except for five years at Head Office in Wellington, most of his earlier service was at city and suburban stations in the Auckland area. In 1936 he was promoted to Stationmaster at Ohaupo, on the Main Trunk line. After more than four years at Ohaupo, Mr. Evans was transferred to the District Traffic Manager's office at Auckland, where he later became Train Control Operator. He was promoted to Train Running Officer in 1947, and, in 1949, was posted to the Transportation Superintendent's office at Wellington. In February



Mr. J. Greenwood
Appointed District Operating Superintendent,
London (W), London Midland Region



Mr. S. Lea
Appointed District Operating Superintendent,
Birmingham (M), London Midland Region



Mr. W. B. G. Collis
In charge of Sales, London,
Metropolitan-Vickers Electrical Co. Ltd.

last year he received further promotion to Senior Train Running Officer, and, in October, was appointed Assistant Transportation Superintendent. After the appointment of Mr. C. H. Bray to the New Zealand Railways Commission, Mr. Evans acted as Transportation Superintendent.

Mr. J. Greenwood, District Operating Superintendent, London (M), who, as recorded in our April 24 issue, has been appointed District Operating Superintendent, London (W), British Railways, London Midland Region, was born at Leicester, and entered the service of the London & North Western Railway in 1914 as a junior clerk at Birmingham. He served as a wireless telegraphist in the R.N.V.R. from 1917 to 1919, and on his return to the L.N.W.R. in the latter year became Relief Booking Clerk at New Street Station, Birmingham. In 1922 he was appointed Stationmaster, Vauxhall & Duddleston, and he was made District Inspector at Birmingham Control Office, L.M.S.R., in 1929, and Station Inspector, New Street Station, Birmingham, in 1931. Mr. Greenwood was Assistant Stationmaster, Preston, 1933-37, during which time he acted as Passenger Agent, Preston, for six months. In 1937, he was appointed Assistant District Controller, Willesden, and for two periods before his next appointment acted as District Controller. After the re-organisation of the Chief Operating Manager's Department of the L.M.S.R. and the formation of the District Operating Managers' offices, he was appointed, in 1946, Assistant District Operating Manager, London (Western). He was appointed District Operating Superintendent, London (Midland), in 1948.

Mr. S. Lea, District Operating Superintendent, Barrow, London Midland Region, British Railways, who, as recorded in our April 24 issue, has been appointed District Operating Superintendent, Birmingham (M), began his railway career with the Midland Railway at Southwell in 1922. After gaining general station experience in the Northampton, Peterborough and Birmingham areas, he became a District Signaller and Traffic Inspector at Bromsgrove in 1938, and, in 1941, was Head Controller at Saltley Control. Mr. Lea subsequently held positions as Assistant District Controller at Leeds and Saltley, and, in 1947, became Assistant to the District Operating Superintendent, Birmingham (Midland) on the formation of that Office. Two years later Mr. Lea was appointed Assistant District Operating Superintendent, Liverpool Lime Street. He became District Operating Superintendent, Barrow, in 1952.

Mr. W. B. G. Collis, B.Sc., A.M.I.E.E., Assistant to Manager, Traction Sales, Metropolitan-Vickers Electrical Co. Ltd., who has been appointed Assistant Sales Manager, Traction Department, in charge of Traction Sales in London, as from March 1, 1953, was educated at Shrewsbury and at the City & Guilds (Engineering) College. After taking his degree he came to Metropolitan-Vickers as a college apprentice in 1928. In 1931 he joined the Traction Control Department, and six years later he transferred to Traction Sales. During the war Mr. Collis served with the Royal Corps of Signals, first on regimental duties in England, France and Belgium, and later on the General Staff at the War Office. He attained the rank of Lieutenant-Colonel and was awarded the M.B.E.

(Military Division), and the Territorial Decoration. On demobilisation Mr. Collis returned to Traction Sales, being appointed in 1947 Assistant (Road Traction) to Manager, and in 1948 Assistant to Manager.

Mr. C. W. Clarke, Assistant Commissioner (Engineering), Western Australian Government Railways, who, as reported in our last week's issue, is in England on a business visit, will leave for New York on April 29. His return journey to Australia will be made via Chicago and Montreal, where he will pay a visit to the Canadian National Railways, leaving Vancouver on May 11 for Australia.

Mr. E. H. Brownbill, Assistant Chief Mechanical Engineer, Victorian Railways, has been appointed Deputy Commissioner of the system.

Mr. C. E. Smith, who, as recorded in our April 3 issue, has been appointed Assistant Transportation Superintendent, New Zealand Government Railways, entered the Railways Department in 1918 as a Cadet at Port Chalmers station. In 1940, after many years experience at city and country stations in the South Island, he was posted to the Train-running office at Invercargill, and seven years later was promoted to Train Running Officer at Ohakune Junction. Last year he became Transport Officer at Napier.

Mr. S. F. Clarke, who, as recorded in our April 3 issue, has been appointed District Traffic Manager, Dunedin, New Zealand Government Railways, joined the railways in 1916 as a Cadet at Southbridge, and has been stationed at various railway offices in the South Island, chiefly in Otago and Southland. From 1930 to 1941 he was Stationmaster at Green Island, and for the next two years held the same position at Morven. In 1947, after four years as Parcels Clerk at Dunedin Station, he was promoted to Commercial Agent for the Dunedin railway district.

Captain R. A. Clarke has been appointed General Manager, Railway Marine Services, Canadian National Railways.

Mr. Hideo Shima, formerly Chief Mechanical Engineer, Japanese National Railways, and his secretary, Mr. Kuniyasu Nariai, recently visited Britain to study railway development and installations with particular reference to mechanical engineering. Mr. Shima and Mr. Nariai left this country on April 30, and are visiting France, Switzerland, Germany and Italy.

We regret to record the death on April 19, in his 70th year, of Mr. H. E. T. Vogel, Chief Technical Assistant to the General Manager of the Leopoldina Railway of Brazil, 1947-48. Mr. Vogel entered the Bow Workshops of the North London Railway as an apprentice in 1898, and he afterwards gained footplate experience on the South Eastern & Chatham and Furness Railways. In 1903 he joined the London & North Western Railway as a Junior Draughtsman, and, in the next year, he was awarded the Merchant Taylors' Prize and Bronze Medal for Railway Carriage Building. Mr. Vogel was a student at the City & Guilds Central Technical College from 1904 to 1906 and was awarded the Diploma in Civil & Mechanical Engineering. In the latter year he joined the Leopoldina Railway, and, after holding various appointments, became Chief Assistant

Locomotive Superintendent in 1911. During the 1914-18 war he served in the Royal Garrison Artillery in India and Palestine, after which he resumed his position as Chief Assistant Locomotive Superintendent, Leopoldina Railway. In 1929 he was appointed Locomotive Carriage & Wagon Superintendent, and, in 1940, became Chief Superintendent of Operations. In April, 1947, he was made Chief Technical Adviser to the General Manager. From April, 1945, Mr. Vogel was responsible, among other matters, for the preparation of plans for suburban and main line electrification and for a central workshops project. Mr. Vogel retired from the Leopoldina Railway on December 31, 1948. The cremation took place at Golders Green on April 23.

Mr. W. Capon, Stationmaster at Marylebone, British Railways, Western Region, retired on April 18 after over 46 years' service.

Mr. W. Murray, Assistant Goods Agent, Leeds Wellington Street, North Eastern Region, British Railways, has been appointed Goods Agent, South Shields.

We regret to record the death on April 23, in his 90th year, of Mr. John Hall Rider, M.Inst.C.E., M.I.Mech.E., M.I.E.E., a pioneer of electricity generation and distribution, and also of electric traction, in this country. Mr. Rider, who, as Electrical Tramways Engineer to the London County Council, carried out the conversion of the whole of the Council's tramways from horse-drawn to electric traction, was a partner in the firm of Preece, Cardew & Rider (at that time known as Preece, Cardew, Snell & Rider). He was elected Vice-President of the Institution of Electrical Engineers in 1910.

Mr. W. R. Clark Lewis, M.Inst.T., Traffic Manager, Babcock & Wilcox Ltd., has retired after 45 years' service.

Mr. G. Ainsworth Wates has been appointed a Director of Johnson & Phillips Limited.

Mr. V. J. Chalwin has been appointed Chairman and Managing Director of the newly-formed Brush Electrical (Australia) Pty. Ltd., with head offices in Sydney, N.S.W.

Mr. J. A. V. Watson, O.B.E., Director & General Manager of C. C. Wakefield & Co. Ltd., has been elected to the Boards of W. B. Dick & Co. Ltd. and J. B. Pillin Limited. Mr. H. H. R. Drossi has resigned from the Board of W. B. Dick & Co. Ltd. owing to ill-health.

Mr. L. F. Poirson, Agent for France of Dean & Dawson Limited, has retired after 46 years service. He is 64. Four years ago the French Government awarded Mr. Poirson the rank of "Chevalier dans l'Ordre du Merite Touristique" for his services to tourism.

Mr. Leslie Gamage, Vice-Chairman & Joint Managing Director of the General Electric Co. Ltd., will leave London by Comet for South Africa on April 22, 1953. Mr. Gamage, who will be attending the Golden Jubilee celebrations of the British General Electric Co. (Pty.) Ltd., will also visit Rhodesia, Swaziland and Portuguese East Africa, and is expected to be away for about three weeks.

Parliamentary Notes**Transport Bill in House of Commons**

Lords amendments finally agreed: Minister's statement on alleged Government favouritism in disposal of road haulage assets: Opposition criticism of guillotine

On the motion that the Lords amendments to the Transport Bill be further considered, Mr. L. J. Callaghan (Cardiff, S.E.—Lab.) on April 22 moved that the consideration be adjourned in view of the events which had occurred since the previous day's debate with reference to the United Dominions Trust. He referred to a statement by Mr. Gibson Jarvie, Chairman of the Trust, reported in *The Times*, that the Trust "with the full knowledge and approval of the Minister," was, in conjunction with the Road Haulage Association organising an *ad hoc* company for the specific purpose of financing potential buyers of transport units, and that any directors, representatives or other employees of the Trust discussing this matter with potential haulage contractors were merely bringing to their notice facilities available if and when the Transport Bill became law.

Mr. Callaghan went on to say that this reported statement was at variance with what Mr. Alan Lennox-Boyd (Minister of Transport) had said.

Minister's Defence

Mr. Lennox-Boyd said that Mr. Gibson Jarvie's statement was quite correct. If Members objected to the creation of a special company between the United Dominions Trust and the Road Haulage Association to finance purchase of transport units, they should have objected when, on February 5, almost every paper carried this news. All that Mr. Gibson Jarvie had done was to say that creation of this company had been with the knowledge and approval of Ministers.

The Government, he added, had given no special privileges to the United Dominions Trust and it was open to any other finance house that cared to make its own arrangement with the Road Haulage Association and got their consent. It was a matter over which the Government had, and wished to have, no influence. He was delighted that the United Dominions Trust and the R.H.A. had come to this sensible arrangement.

No transaction of this kind could ever be carried out without Government knowledge and approval. He had not announced it because it was self-evident.

He thought the B.T.C. had quite rightly said that if approaches were made to its staff about visits to its depots they should be referred to headquarters. He had had this in mind when he had said that things of this sort should be examined by the headquarters of the Road Haulage Executive, who would then give advice to its own servants. He thought it had acted with complete propriety.

After lengthy discussion of the matter, Mr. Callaghan's motion for the adjournment was, by leave, withdrawn.

Companies to Dispose of Units

On the new clause setting up company structure to dispose of units Mr. Herbert Morrison (Lewisham S.—Lab.) moved an amendment to provide that the shares remaining at the end of 1954 might be retained by the B.T.C. It was not desirable to assume that all the shares would be sold, and if at the end of 1954 some remained, there would be uncertainty.

Another reason for the amendment was the ending of the 25-mile limit in 1954.

Mr. Gurney Braithwaite (Parliamentary Secretary, Ministry of Transport) said that the amendment would seriously hamper Government policy. It would have a dilatory effect on the Commission and tempt those who wished to retain control to know that all they had to do was play out time until a specified date.

If the time came, he said, when those responsible found they were landed with shares, the Government would try to reform the companies into a more marketable form. It was not for him to say whom they would seek as buyers.

Mr. Lennox-Boyd said that there was no obligation for the shares to be disposed of by the end of 1954. The only relevance of that date was the end of the 25-mile limit, and the value of transport units or companies might be thought likely to diminish. The B.T.C. must dispose of the property in companies or units as quickly as practicable, and the Government believed that duty would be punctiliously discharged.

The closure was carried, and the amendment negatived.

Alteration over Procedure

At 12.30 a.m. on April 23, when Mr. Harry Crookshank (Leader of the House) moved adjournment of the debate, a long altercation arose after Mr. Morrison accused the Government of vindictiveness in the matter of procedure in discussion of the Bill. Sir Winston Churchill participated. Eventually the motion was agreed, and the House adjourned at 1.40 a.m.

Sale of Company Shares

Mr. A. J. Champion (Derbyshire S.E.—Lab.) when debate was resumed on April 23, moved an amendment to a clause inserted by the Lords, giving the Commission power to create companies and to sell all the shares "as soon as reasonably practical." The Opposition amendment sought to give the B.T.C. more latitude and to permit it to sell such shares as would be necessary to divest it of control.

Mr. R. Maudling (Economic Secretary to the Treasury) said that if the amendment was accepted it would raise difficulties in assessment of the road haulage capital loss. If the Commission disposed of all the shares it would be known exactly how much they had.

The closure was moved and, after Opposition protests, carried, and the Opposition amendment was negatived.

An amendment by Mr. Ernest Davies (Enfield, E.—Lab.) to the Lords new clause to delete a provision that public tenders for the purchase of shares in a company should be for the purchase of all the shares "in one parcel," also was negatived.

Guillotine Imposed

Mr. Crookshank pointed out about 11.30 p.m. that at the then pace of the debate 90 more hours would be needed to complete the Bill, and said that on the Monday a guillotine motion would be submitted which would mean the ending of the proceedings by 10 o'clock that night. A

further altercation arose when Mr. Morrison alleged that this was unconstitutional. Referring to the decision to prolong the debate further than the Government had intended, Sir Winston Churchill asked Mr. Morrison to be magnanimous in victory; later, he said no good Parliamentarian could help feeling that there had been very unfair use of Parliamentary time.

The House rose at 2.30 a.m.

Privilege Issue

When Mr. Crookshank, on resumption of debate on April 27, rose to move the motion on allocation of time, Mr. Morrison asked if points of order could be raised first, and said that certain of the Lords amendments involved questions of privilege.

The Speaker (Mr. W. S. Morrison) ruled that points of order must come out of the time for the debate. If the House sanctioned the amendments—and he saw no difference between passing them *seriatim* or *en bloc*—it had automatically waived its privilege, and then all that could be done to protect the future was to see that a special entry was made in the *Journal*. The House could take it as an additional reason for voting against the amendments *en bloc* that they did raise the question of procedure which it was not prepared to waive.

He did not know of another case in which the Lords amendments had been agreed to *en bloc* although there were two instances of their being disagreed, in 1906 and 1909, but it was not beyond the power of the House to make that order. Therefore, he must adhere to his ruling.

Constitutional Aspect

Mr. Aneurin Bevan (Ebbw Vale—Lab.) said that the constitutional relationship between the two Houses had been gravely affected by this measure, that if any guillotine motion was moved in this knowledge it would imply the power on the part of the Government, under a subsequent order made under the original order, to prevent any consideration of the Lords amendments to a Bill.

The Speaker said that the Government could not, in the technical sense, prevent consideration of those amendments. Time-table motions were binding on the House and the only guarantee against their harsh nature was the good sense of the House. The standing order relating to the Business Committee referred to the "stages of the Bill" in the Commons, but did not apply to these proceedings.

After considerable argument, Mr. Crookshank resumed his speech. He said that the Opposition had encouraged unprecedented filibustering, but that the Government would agree to half-an-hour of extra time. The Lords amendments were not revolutionary, and minority rights had been amply safeguarded.

Mr. Herbert Morrison, moving the amendment to add the extra half-hour (which was agreed to) complained that the guillotine during the earlier stages of the Bill meant that many matters of importance had to be considered in the Lords which should have been considered in the

Commons. That was bound to increase discussion. The amendments made in the Lords were substantial.

An amendment by Mr. Callaghan, to permit each Lords amendment to be voted on separately, was negatived.

Credit for Buyers of B.R.S. Vehicles

Consideration of the Lords amendments was then resumed, on the new clause (Transfer of property to companies with a view to the sale of their shares) which had been inserted by the Lords and to which the Government had accepted an Opposition amendment.

Mr. Lennox-Boyd said the B.T.C. had stated that some company structure would help in disposal of the road haulage assets and assist maintenance of services during transition. The main purpose of the Bill remained undisturbed.

The President of the Board of Trade had authorised him to say that it was his intention when the Bill became law to make an order amending the Hire Purchase & Credit Sale Agreement (Control) Order, 1952, to exempt from the requirements of that order hire-purchase agreements relating to the disposal of road haulage executive vehicles. No credit facilities would be made available to the United Dominions Trust or their customers that would not be available equally to others.

He regretted the disturbance caused by road haulage denationalisation to individuals and the uncertainty about their future, although he believed that political pressure was being exerted to play on their natural fears. What about the many thousands of small hauliers who on nationalisation lost businesses which had formed their life's work? The greater proportion of the men would, the Government hoped, be absorbed.

There was nothing to stop the B.T.C. forming the assets into companies or selling the vehicles as units. There was no time limit in the Bill now, and the Commission and the Disposals Board could do as they thought best.

Mr. Herbert Morrison said the Government in relaxing the regulations about hire purchase was playing with its own regulations. That was an act of political partisanship by the Government for the furtherance of its own political policy and in the interests of its friends outside.

Final Vote

At 10.30 p.m. the guillotine fell and the motion to agree with the outstanding Lords amendments was carried by 304 votes to 276.

The Speaker, replying to a question by Mr. Herbert Morrison, said there were seven amendments involving the privilege of the House. In general, they all involved, directly or indirectly, some slight charge on the Exchequer. He would see that a special entry was made in the *Journal*.

The Bill was due as we went to press to be sent back to the House of Lords.

Censure Motion on Use of Guillotine

The Opposition has tabled a motion of censure on the Government arising from the Government's use of the timetable motion earlier this week to bring proceedings on the Lords amendments to the Transport Bill to an end.

The motion stands in the names of Mr. Attlee, Mr. Herbert Morrison, Mr. Chuter Ede, Mr. Aneurin Bevan, Sir Frank Soskice, and Mr. Callaghan, and reads: "That this House deplores the action of the Government in using the House of Commons' consideration of Lords amendments

in a manner contrary to the spirit of the Constitution and in such a way as to impair the privileges of the Commons and to reduce the legislative status of this House."

Steel Bill Committee Stage in Lords

When the committee stage of the Iron & Steel Bill was resumed in the House of Lords on April 21, Lord Silkin, moving one of a series of amendments, recalled that under the Bill the Board had to consult with producers so as to secure efficient, economic, and adequate supplies of iron and steel products.

There was a hiatus, he said, in the arrangements, as the Board had no supervision over existing production facilities. The amendment sought to extend the Board's powers so that it could supervise existing facilities as well as new ones and those about to go out of existence.

The Marquess of Salisbury (Lord President of the Council) said the Government rejected the assumptions underlying the amendment. Competition was a far greater guarantee to efficiency than over-exercised control.

The amendment was rejected.

Lord Wilmot moved an Opposition amendment to the clause on production facilities. He explained that the object was to provide for other raw materials—such as tungsten and chrome—as well as iron ore. These were alloy metals used in high-grade steels.

Lord Mancroft (Lord in Waiting) suggested the amendment might be withdrawn; if so, the Government would reconsider the matter.

The amendment was withdrawn.

State Ownership of Shares

Earl Jowitt, when discussion was resumed on April 22, moved an amendment to Clause 18 (Duties of the Holding & Realisation Agency) to provide that the Government should retain 40 per cent of the shares in the undertakings. He said that it was bad for industry to be in a state of flux according to which political party was in power. He wished to establish the principle that this business should be run by private enterprise, because that was what the country had settled, but there should be a substantial block of shares, not a controlling block, held in some form by the State, so that the State and private enterprise might work in harmony together.

Lord Mancroft said the provision that the Government should hold some 40 per cent, or even 25 per cent of the equity would be unsatisfactory for private companies. The existence of a large minority shareholding would make it hard for parent companies to arrange their relations with their otherwise wholly-owned subsidiaries. If the Agency was to remain a permanent shareholder, then the Agency would itself become a permanency. The amendment was a contradiction of the objective embodied in the Bill.

Lord Balfour of Inchrye said that the Government of the day would virtually have control without nationalisation.

Lord Jowitt admitted, in reply to a query by Lord Salisbury, that he had put out this olive branch on his own behalf and not on that of the Opposition.

Lord Salisbury, for the Government, said he would not have been in a position to consider such a suggestion, even if it had had the whole Labour Party behind it.

The amendment was negatived.

The Committee Stage of the Bill was concluded.

Loans for Buying R.H.E. Assets

Mr. L. J. Callaghan (Cardiff S.E.—Lab.) on April 16 asked the Chancellor of the Exchequer if he would reverse his advice to the banks that loans to finance houses and other private persons to buy lorries from the Road Haulage Executive might be given the same priority as loans for export, defence, agriculture, and Commonwealth development, in view of the present restrictions on borrowing.

Mr. R. Maudling (Financial Secretary to the Treasury) replied that the general priorities which the banks had been asked to apply in accordance with the Government credit policy remained unchanged. The economic significance between a transfer of existing assets and the creation of new assets must not be ignored.

Capital Formation

Mr. Reginald Maudling (Economic Secretary to the Treasury) on April 16, in a written reply to Mr. Ellis Smith (Stoke-on-Trent S.—Lab.) who asked the gross fixed capital formation by industry in agriculture, coal mining, railways and air transport, gave the following figures:

GROSS FIXED CAPITAL FORMATION
(£ million)

	1948	1949	1950	1951	1952
Agriculture ...	84	82	84	89	81
Coalmining ...	24	31	27	30	41
Railways ...	63	62	58	60	60
Air transport ...	18	31	16	14	17

The figures for 1952 are provisional. For 1938 the figure for railways is £30 million and that for air transport £1 million. Mr. Maudling said that no figures were available for agriculture or coalmining.

Groundnut Transport in Nigeria

Mr. Oliver Lyttelton (Secretary of State for the Colonies) said in reply to a question on April 21 that he could not give an estimate of the cost of storing groundnuts in Nigeria because of the inability of the railway to move the crop. Too many variable factors, he said, were involved.

That delay still arose was due mainly to the greatly increased crops since 1951, but measures to improve the efficiency of the railway had been taken, and the rate of railings since this season began last November had been substantially higher than last season.

THIRD STAGE OF DORMAN LONG DEVELOPMENT PLAN.—A start has been made on Stage III of the postwar development plan of Dorman Long & Co. Ltd. The largest item is installation at Lackenby of a universal beam and heavy section mill; a fifth steel furnace is being added to the Lackenby melting shop to bring the annual output of this new steelworks to 625,000 tons of ingots. Stage III also includes provision of two hearth blast furnaces with a joint capacity of 750,000 tons a year and a large coke oven plant at Cleveland Works, also a new blooming mill and additions to the existing mill, and a high-capacity rod and bar mill. On completion of these projects, which may take up to five years, the firm's annual productive capacity is estimated to be: blastfurnace coke, 1,481,000 tons; iron, 1,690,000 tons; steel ingots, 2,315,000 tons; rolled steel, 1,879,000 tons. Rolled steel produced by the company last year amounted to 1,347,000 tons.

B.T.C. Charges Scheme Before Tribunal

Conclusion of 23-day hearing

Witnesses before the Transport Tribunal on April 22 again urged a policy of attracting traffic to London Transport by means of reduced fares, when the hearing was resumed of the B.T.C. application for its Passenger Charges Scheme, 1953. One proposal was that the standard fare should be at the early morning rate, and that existing fares should be charged during rush hours.

Sir Reginald Wilson, Comptroller of the British Transport Commission, gave evidence on April 23. He described the considerations in view when it was decided that London Transport services should appropriately contribute £5,500,000 to central charges in the hypothetical "Y" year. No target had been fixed for 1948-49, and if there had been one at that time it would have been necessary to fix it rather higher.

Mr. A. B. B. Valentine, Member of the London Transport Executive, said in evidence that many reasons made it impracticable to have a minimum fare of 2d. for the first mile and then half-mile fare stages costing 1d. It would increase the amount of wastage through conductors being unable to collect fares while the buses were still in the same fare stage as where passengers boarded the vehicles. They were already satisfied that the present under-charging through late collections of fares was very serious indeed.

Mr. Harold Willis, Q.C., for the British Transport Commission, said that a maximum of 12 weeks would be required to put the new fares scheme into operation, provided the Tribunal's alterations, if any, to the scheme were comparatively few and only in the monetary columns of the schedules. They submitted that since the last inquiry there had been a deterioration to the tune of £4,900,000 on London Transport. Having seen what was necessary to make London Transport stand on its own feet, obviously in order to preserve the principle of assimilation, corresponding increases ought to be made in the fares of London lines. These latter fares were related to those on London Transport.

The Commission took the view that the London area, having been accepted as the unit, should pay for its proper costs and no more. London transport costs could be assessed with reasonable precision. London lines costs on the other hand, could only be estimated by a series of assumptions. Their view was that in any estimates for London as a whole, the London transport figures must be given greater weight through their greater reliability.

Dealing with the L.C.C. suggestion that the standard fare should be at the early morning rate, with the existing fares charged during "rush hours," Mr. Willis said he did not think the L.C.C. would suggest that the L.T.E. had the slightest desire to put fares up if it could be possibly avoided. Their desire, as had been stressed over and over again, was to maintain the most cordial relations with the travelling public, and they realised that increasing their fares was something the public did not want. Would they be stupid enough to seek for increased fares if they thought that the same result could be effected in some more attractive way?

Mr. Willis then gave an undertaking on behalf of the Commission that at least for 12 months they would not raise early morning or sub-standard fares, unless ordered by the Tribunal to do so. To the sugges-

tion made by Southend objectors that there should be non-intermediate season tickets on the Southend to London line, Mr. Willis said that it was the Commission's intention to abolish non-intermediate seasons altogether. In those circumstances it would be wrong to extend these facilities, which existed on some lines at the moment.

The President, Mr. Hubert Hull, announcing that the Tribunal would publish its decision in due course, said that the new Transport Bill might contain some provisions as to what might or must not be put in a charges scheme. They could not come to any decision as to what changes would have to be made in this scheme, provided they confirmed any scheme, until the Bill was passed. He did not think any alterations would be very large.

The hearing then concluded.

Railway Centenary Celebrations in Bombay

The Governor of Bombay, Sir Girja Bajpai, was present at the celebration in Victoria Terminus, Bombay, on April 16, of the centenary of the opening of the first railway in India, the Great Indian Peninsula, from Bombay to Thana. Mr. H. P. Hira, General Manager of the Central Railway, which absorbed the G.I.P.R. in 1951, presided.

Sir Girja Bajpai, addressing a large gathering in a specially decorated pavilion in the terminus, stressed that the Indian railways were owned and run by the Government of the country for the people of India, who were part owners of this vast enterprise. A hundred years were a short span in the history of India, but the political and economic development during those 100 years was unprecedented; the railways had played a great part in bringing about that development.

Mr. Hira described the beginnings and the growth of the G.I.P.R.

Mr. F. C. Badhwar, Chairman, Indian Railway Board, compared the occasion to a birthday party, and explained how the railways were striving to serve India in handling increasing transport demands. It was customary on such occasions, he pointed out, to give presents to the host, and he expected the people to give the railways a present in the form of consideration and understanding of their problems.

Representative past and present locomotives and rolling stock were exhibited at Victoria Terminus, whilst for several days the station and Headquarter offices were specially illuminated, as were certain trains.

Centenary Dinner

Under the auspices of the G.I.P. Railway Officers' Association, a centenary dinner was held at the Cricket Club of India, Bombay, on April 19. All the officers of the Central Railway in Bombay were present with their ladies, and some retired officers. Among the latter were Messrs. K. C. Bakhle, former Chief Commissioner for Railways, N. S. Sen, and A. C. Chatterjee.

Mr. J. E. Jack, President of the Association, proposed the toast of the Central Railway.

Mr. Hira exhorted the officers of the railway to maintain and enhance the tradi-

tions of service established by their predecessors.

Mr. Bakhle paid a tribute to the Central Railway administration for the excellent way in which the centenary celebrations were conducted in Bombay, which he said were in accord with the uniqueness of the occasion.

Staff & Labour Matters

Pensions of Railway Annuitants

Additional details of the scheme recently approved for amelioration of the pensions of railway annuitants have been given by Mr. Alan Lennox-Boyd, Minister of Transport, to Major S. F. Markham, Conservative M.P. for Buckingham. Previous information given by the Minister in answer to a question in the House of Commons was recorded in our April 24 issue.

Total pension from transport sources	Rate of supplementation per annum (Years' service)			
	10-14	15-19	20-24	25 or over
£	£	£	£	£
Up to 55 ...	20	25	30	35
56 ...	19	24	29	34
57 ...	18	23	28	33
58 ...	17	22	27	32
59 ...	16	21	26	31
60-75 ...	15	20	25	30
76 ...	14	19	24	29
77 ...	13	18	23	28
78 ...	12	17	22	27
79 ...	11	16	21	26
80-95 ...	10	15	20	25
96 ...	9	14	19	24
97 ...	8	13	18	23
98 ...	7	12	17	22
99 ...	6	11	16	21
100-120 ...	5	10	15	20
121 ...	—	9	14	19
122 ...	—	8	13	18
123 ...	—	7	12	17
124 ...	—	6	11	16
125 ...	—	5	10	15
126 ...	—	—	9	14
127 ...	—	—	8	13
128 ...	—	—	7	12
129 ...	—	—	6	11
130 ...	—	—	5	10
131 ...	—	—	—	9
132 ...	—	—	—	8
133 ...	—	—	—	7
134 ...	—	—	—	6
135 ...	—	—	—	5

Total pension from transport sources to include where appropriate, the annuity value of the capital sum benefit from superannuation fund.

INTEREST RATE FOR RHODESIAN LOAN.—The interest rate for the World Bank's loan to Northern Rhodesia for the development programme of the Rhodesia Railways was 4½ per cent, and not 5½ per cent as given out at the time. The loan was the subject of an editorial note in our March 20 issue.

TEMPERATURE INDICATING POINTS.—The Badische Anilin & Soda Fabrik thermocolour temperature-indicating powders are now available from Allied Colloids (Bradford) Limited. These products are applied in the form of a paint with industrial methylated spirits and give very accurate indication of thermal zones under observation. The thermocolours are particularly useful for non-destructive material testing and for control work in industry generally, wherever heat distribution presents a problem. Further additions to the range of chemical temperature indicating products are the A. W. Faber thermochrom crayons, which work on a similar principle to the thermocolours. These products are also available from Allied Colloids (Bradford) Limited.

Contracts & Tenders

British Railways, Eastern Region, have placed a contract with M. J. Gleeson (Contractors) Limited, North Cheam, for the reconstruction of the station and widening of the lines at Potters Bar.

The Crown Agents for the Colonies have placed an order with the Hunslet Engine Co. Ltd. for six 3-ft. 6-in. gauge 0-8-0 tender-tank locomotives for the Nigerian Railway. The locomotive is the standard 48½-ton 18-in. by 23-in. cylinder 0-8-0 tank engine, of which Hunslet have built many, with the side tanks retained but with the bunker cut off and the cab altered. To this has been added a six-wheel tender with a water capacity of 4,000 gal., giving a total of 5,000 gal. for the locomotive. The combination allows the engine to operate over longer distances or for longer periods than a standard tank locomotive.

British Railways, North Eastern Region, have placed the following contracts:—

H. L. Ramsden, Mirfield: Cleaning and painting station buildings, warehouses, signal-boxes, etc., Bradford District.

N. G. Bailey & Co. Ltd., Leeds: Electric lighting installation, Huddersfield Station.

F. & J. Watkinson, Bradford: Dismantling of existing four penthouses with adjoining veranda roof, and making good warehouse wall and roof, and the remaining veranda roofing, Elland Goods warehouse.

Walter Thompson (Contractors) Limited, Northallerton: Standard brick and timber traders' store, Stokesley.

The 90 type "C" diesel-electric shunting locomotives on order for the Netherlands Railways referred to in our April 24 issue are being supplied complete by the English Electric Co. Ltd., having English Electric diesel engines as well as electrical equipment and mechanical parts.

The Director-General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for 1,020 ventilators for carriage roof, broad gauge.

Tenders are to be submitted to the Director-General of Industries & Supplies, Shahjahan Road (Section SR1), New Delhi, quoting reference SR1/16129D/1 and will be received up to 10 a.m. on May 8.

The Director-General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

(a) 700 Cast-steel axlebox body 10 in. by 5 in. journals (broad gauge).

(b) 100 axlebox body 9 in. by 4½ in. journals, 1 in. groove, 7 ft. 3 in. centre of journal.

330 Axlebox assembly 10 in. by 5 in. journals (broad gauge) for coaching underframe, and 16 tons axle four-wheel wagons.

700 Axlebox body 10 in. by 5 in. journal (broad gauge).

(c) 10,899 locomotive components, steel castings, various items.

Tenders are to be submitted to the Director-General of Industries & Supplies, Shahjahan Road (Section SR1), New Delhi quoting references SR1/16243-D/I for tender (a); SR1/16245-D/I for (b); and SR1/16198-D/II for (c). They will be received up to 10 a.m. on (a) May 12; (b) May 22; and (c) June 15.

The United Kingdom Trade Commissioner at Delhi has notified the Commercial Relations & Exports Department of the Board of Trade of a call for tenders issued by the Directorate General of

Supplies & Disposals, Government of India, for 1,100 cwt. bolts and nuts fish, 3½ in. × ½ in., without washers.

Tenders should reach the Director General of Supplies & Disposals, Shahjahan Road, New Delhi, by 10 a.m. on May 7. A copy of the tender documents is available for inspection at the Board of Trade by representatives of interested United Kingdom manufacturers. A further copy is available on loan in order of application. Reference CRE/14374/53 should be quoted.

The Special Register Information Service of the Board of Trade, Commercial Relations & Exports Department, reports that the Commercial Attache of the British Embassy at Brussels has notified a call for tenders issued by the Belgian National Railways for:—

Lot 1.—20 diesel-electric locomotives fitted for train heating; 30 diesel-electric locomotives not fitted for train heating

Lot 2.—45 diesel-electric locomotives fitted for train heating

Tenders will be opened at 2.30 p.m. on June 24. They should be addressed to the Direction du Matériel et des Achats de la S.N.C.B., Section 15, Bureau 26-31, 24 Rue aux Laines, Brussels, and must be submitted at least three days before the date of opening. A copy of the tender documents (in French) is available for inspection at Room 6176, at the Board of Trade, until May 16, by representatives of United Kingdom manufacturers, after which date they will be available on loan in order of application. Reference CRE/13278/53 should be quoted.

The Special Register Information Service of the Board of Trade, Commercial Relations & Exports Department, states that the Commercial Secretariat of the British Embassy at Bangkok has reported that the State Railways of Thailand are inviting tenders for the supply of machine tools, electrical equipment, cranes and other equipment, for the Nakorn Rajasima and Tung Song Workshops. Complete details of requirements are given in the specifications.

The closing date for the receipt of tenders is 10 a.m. on May 19. The tender should be placed in a sealed envelope, bearing the inscription "Tender for Equipment and Material for Nakorn Rajasima and Tung Song Workshops, State Railways of Thailand," and addressed to the Committee for the Opening of Tenders, Store Office, Railway Administration, Bangkok.

One copy of the specifications and general conditions of tender is available for inspection at the Board of Trade, Commercial Relations & Exports Department, Room 6152, Horse Guards Avenue, London, S.W.1. A second copy is available on loan to interested United Kingdom firms, in order of application. The reference number CRE/13213/53 should be quoted.

Before submitting the tender a deposit of 3,000 bahts in cash, or bank endorsed cheque or bank guarantee only (other forms not accepted) has to be made. The receipt of this deposit must be produced when submitting the tender, which should be in English. The price for tender conditions and form is 100 bahts, and the tender will be accepted and considered only if submitted on the tender form. Prices quoted should be F.O.B. and C.I.F. Bangkok (Port of Bangkok at Klong Toi) and the date of delivery ex-works should be stated.

Notes and News

Closure of Isle of Wight Lines.—Passenger services on the Brading-Bembridge branch will cease on June 7 and those between Newport and Freshwater, and Newport and Sandown on September 20.

Temporary Technical Assistants Required.

—London Transport require temporary technical assistants in Signal Engineer's office, Earls Court, to prepare plans, drawings and wiring diagrams for railway power signalling schemes. See Official Notices on page 523.

Werkspoor Orders for Argentina.—On page 456 of our October 24, 1952, issue we reported the delivery of the first units of the orders placed with Werkspoor by Argentina. The 30 metre gauge diesel-electric shunting locomotives listed should have read 50, and ten diesel-electric locomotives for the broad gauge were listed incorrectly as electric locomotives.

"The Journal of Transport History."

The University College of Leicester is to publish twice a year, in May and November, a new journal entitled *The Journal of Transport History*, edited by Mr. R. M. Robbins, Secretary, London Transport Executive, and Professor Jack Simmons, Professor of History, University College, Leicester. The subscription rate is 18s. a year; single copies are 10s. each. The first number is being published this month. The aim is to provide a medium for publication of studies of the history of all forms of transport and a common ground for professional historians and transport men. Transport in Great Britain will be the main interest but development in other countries will not be excluded.

The National Industrial Safety Conference at Scarborough, May 29-31, 1953.

—The National Industrial Safety Conference this year will open at the Spa Theatre, Scarborough, on the evening of Friday, May 29. After a civic welcome by the Mayor of Scarborough, delegates will hear an address given by Lord Llewellyn, President of the Royal Society for the Prevention of Accidents, the organisers of the Conference. At the Conference a number of papers will be read, and as in previous years, the trade exhibition of industrial safety appliances will be held in the Grand Hall, Huntries Row, near to the accommodation provided for the delegates. Mr. Peter Wickins, the Conference Press Officer, will hold a Press Conference at the Royal Hotel, Scarborough, at 11.15 a.m. on Friday, May 29. The Conference will end on Sunday morning, May 31.

New Bearing Alloys.—The development of a new range of bearing alloys was described at an open discussion on bearing materials after the annual general meeting of the Institute of Metals in London on April 16. Dr. J. W. Cuthbertson, Assistant Director of Research at the Tin Research Institute, who opened the discussion, said that as a result of the discovery that the tin content of aluminium-tin alloys could be increased from 6 per cent, as at present used to 30 per cent or more, by cold working and re-crystallisation sheet treatment after casting, an entirely new range of attractive bearing alloys had become available. The properties of the matrix of these alloys could be further modified at will by the addition of copper, thus increasing their versatility. They had excellent fatigue properties, and were being developed mainly as an alternative to

copper lead, over which they possessed the advantage of being softer. Dr. Cuthbertson added that tests in the laboratories of the Tin Research Institute at Greenford had given most encouraging results.

B.I. Callender's Cables Lincoln Office.—British Insulated Callender's Cables Limited, Lincoln branch office will be transferred to 113, Canwick Road, Lincoln, on May 4. The telephone number will be unchanged at Lincoln 654.

British Railways Iron and Steel Traffic.—A record tonnage of iron ore—355,200 tons—was carried by British Railways during the week ended April 18; 225,543 tons of iron and steel were conveyed from the principal steel works during the same period.

Stephenson Locomotive Society, Midland Area, Rail Tour.—A rail tour of the closed lines in Derbyshire, Leicestershire and Nottinghamshire, has been arranged by the Stephenson Locomotive Society, Midland Area, to take place on Saturday, May 16. The tour will start from Derby Midland at 1.55 p.m., and traverse the Ambergate—Pye Bridge, Westhouses—Mansfield, Mansfield—Southwell, Newark—Bottesford North—Sealford, Sealford—Waltham on the Wolds, and Waltham—Holwell branches, returning via Nottingham Midland and arriving Derby Midland about 7.30 p.m.

Silentbloc Dividend.—An interim dividend of 2½d. per 2s. share, less tax, will be paid by Silentbloc Limited in respect of the year ended May 31, 1953. Last year the corresponding payment was 3d. per share, followed by a final dividend of similar amount. A special interim dividend was also paid from an amount set aside in 1951. The directors state that the sales for the half year have shown a satisfactory increase. Growing weight of taxation, rendering it impossible to provide adequately out of current profits for expansion of the business, has made it prudent to conserve the liquid resources of the company by a reduction in the dividend.

G.W.R. Special Trainees' Reunion.—The G.W.R. Special Trainees' 22nd Reunion and Dinner took place at the Great Western Royal Hotel, Paddington, on

April 17. As in previous years the arrangements were undertaken by the 1923 Group of trainees and the chairman was Mr. R. P. Davis, District Goods Superintendent, Birmingham, London Midland and Western Regions. More than 30 members of the training scheme attended. The toast "British Railways" was proposed by Mr. T. H. Hollingsworth, Commercial Superintendent, Scottish Region, and that of "Colleagues Overseas" and "Colleagues in Industry" by Mr. E. Havers, Mineral Assistant to the Commercial Superintendent, Western Region.

Elsenham—Thaxted Branch.—On and from June 1, the freight and parcels service will be withdrawn from Sibley's and Thaxted on the Elsenham and Thaxted branch of the Eastern Region. Facilities for handling merchandise, coal and parcels traffic will be available at Elsenham, where Railway Executive cartage services will continue to be available.

Railway Benevolent Institution.—At a meeting on March 25, the board of the Railway Benevolent Institution granted annuities to 12 widows and 6 members involving an additional liability of £327 19s. per annum; 72 gratuities were also granted to cases of immediate necessity. Grants made from the Casualty Fund during the month of February amounted to £572 16s. 6d.

L.M.R. Final Ambulance Competition.—Nine teams took part in the final ambulance competition of the London Midland Region held at Belle Vue Gardens, Manchester, on April 24. Wolverton "A" team won with 511½ marks out of a possible 600; Derby Erecting Shop and Nuneaton were second and third, with 493½ and 487 marks respectively. Mr. F. A. Pope, Member, British Transport Commission, and Mr. J. W. Watkins, Chief Regional Officer, London Midland Region, attended the competition. Mrs. Pope presented the prizes.

Royal Engineers Association: London Sapper Reunion.—The London Group of branches of the Royal Engineers Association is holding a re-union on Saturday, May 16, at 6.30 p.m. for 7 p.m., at the Duke of York's Headquarters, Chelsea, S.W.3. This

is intended to be the first of a series of social events for Sappers and ex-Sappers within Metropolitan London. Admission is by ticket only, price 3s., obtainable from Mr. J. S. Pearson, Room 31, Horse Guards, Whitehall, S.W.1., Adjutant or R.S.M., 101 Field Engineer Regiment, R.E./T.A. Drill Hall, Duke of York's Headquarters, Chelsea, S.W.3., Mr. C. G. Mathews, R.E.B.F., 29, Thurloe Street, Kensington, S.W.7, or from the Hon Secretary of any London Branch of the R.E. Association.

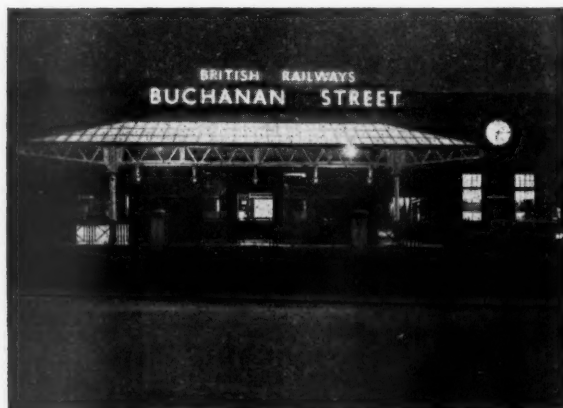
Houses Subside into Tunnel at Swinton, Lancs.—Five persons were killed and two injured when a pair of semi-detached houses collapsed into a tunnel some 60 ft. below at Swinton, Lancashire, early in the morning of April 28. The tunnel, named Clifton Hall and 1,730 yd. long, is situated on the line between Patricroft and Clifton Junction, which is now used only for goods traffic. About three weeks ago the line was closed to allow maintenance work to be carried out. An inquiry was due to be held by the London Midland Region on April 30.

L.M.R. Coronation Trains Programme.—On Coronation Eve (June 1) the London Midland Region will run 60 special trains into Euston, St. Pancras, and Wembley. This programme is in addition to many reliefs to ordinary trains. The first of the specials will reach Euston at midnight and arrivals will continue until the early hours of the morning. In addition, for visitors to London to see the decorations and flood-lighting, the L.M.R. will be running special day and half-day excursions from all parts from May 30 to June 30.

L.M.R. Station Cleanliness Competition.—Every station on the London Midland Region served by passenger trains is to enter a new competition for cleanliness and tidiness; prizes will be awarded for the best in each area. A certificate will also be awarded to each prize-winning station and to any other station earning commendation. The stations (numbering more than 1,000) will be inspected on at least two occasions during the year and marks will be awarded at each inspection.

Runabout Tickets during 1953 Holiday Season.—Holiday runabout tickets will be re-introduced by British Railways for the

Illuminated Signs at Glasgow Stations



Neon signs have been adopted by the Scottish Region to improve the night-time appearance of Queen Street and Buchanan Street

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

ACCOUNTANT (TRAFFIC AUDITOR) required by the Central Railway of Peru—about 30 years of age, preferably single, with general auditing and railway accounting experience, knowledge of Spanish desirable but not essential. Apply—THE SECRETARY, PERUVIAN CORPORATION LTD., 144, Leadenhall Street, London, E.C.3.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

REQUIRED by the Central Railway of Peru two Locomotive Assistants preferably single and between 26/30. Qualifications: Full apprenticeship with British Railways or Locomotive Builders and experience in one or more of the following: Railway Machine Tool Operation. Welding Boiler works, Locomotive Running or Drawing Office. Also two fully trained Steam Locomotive Engineers aged between 30/45. Experience preferably in South America with locomotive running or locomotive workshops in supervisory positions. A.M.I.Mech.E., desirable and knowledge of Spanish essential. Apply SECRETARY, PERUVIAN CORPORATION LTD., 144, Leadenhall Street, London, E.C.3.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10s. 6d.—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

LONDON TRANSPORT require temporary technical assistants in Signal Engineer's Office, Earls Court, to prepare plans, drawings and wiring diagrams for railway power signalling schemes. Minimum qualification, National Certificate in Electrical Engineering, drawing office experience an advantage. Salary £364 at 22 rising to £579, subject to satisfactory service, with additional payments for certain recognised qualifications: medical exam. Applications within 14 days to STAFF OFFICER (F/EV 235), London Transport, 55, Broadway, S.W.1. For acknowledgment enclose addressed envelope.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth. 8½ in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

spring and summer season, between April 26 and October 31. In the Western Region alone they cover 22 separate holiday areas, including the West of England, Wales, the Wye Valley and Stratford-on-Avon area. They are issued on any day and provide one week's (five days over the Isle of Wight railways) unlimited travel within specified limits. The cost varies from 10s. 6d. to £1 15s., and in some cases steamer travel is included.

L.M.R. Heysham—Belfast Sunday Sailings.—Sunday sailings to and from Heysham and Belfast by London Midland Region steamers will begin on May 31 this year instead of on the first Sunday in July as in previous years. The ships will leave Heysham at 11.40 p.m. and Belfast (Donegall Quay) at 9.40 p.m.

Road Accidents in February and March.—The number of road casualties so far reported to the Ministry of Transport for March is 15,833, with 355 killed, 3,978 seriously and 11,500 slightly injured. Compared with the same month last year, this is an increase in the total of 1,856. Casualties in the first two months of 1953 were also substantially higher than a year ago. For February final figures show a total of 13,086, or 1,094 more than in February, 1952; the chief increases were among drivers and pedal cyclists. As in January, the rise was mainly due to accidents at night on roads not subject to speed limit. Casualties to children were about the same, which is thought to result from road safety instruction in schools.

The Welding of Aluminium.—A series of welding demonstrations is being given by the Northern Aluminium Co. Ltd., assisted by Aluminium Laboratories Limited, at various centres throughout the country. In the argon tungsten arc and the shielded inert gas metal arc processes demonstrated, it is shown how one of the problems associated with aluminium welding, the fine oxide layer that forms on aluminium when exposed to the air, has been overcome during welding by shrouding the weld pool with an inert gas, argon, which prevents the re-oxidation of the weld metal after the skin has been broken up by the electric current. It is shown how both techniques can be used to make high-quality welds in assembling aluminium alloy plate into butt, fillet and lap joints made in the downhand, horizontal, and other positions, and the joining of extruded sections by the shielded inert gas metal arc process. The principle of the argon tungsten arc process is explained in the British Oxygen Co. Ltd. film, "Argonarc Welding," and a film "Aircomatic Welding" by the Air Reduction Sales Company, shows the differ-

ences and similarities between the various processes.

Siding Facilities for Harlow New Town.—New rail connections and sidings accommodation are to be provided by the Eastern Region to serve an industrial estate which is being established by the Harlow Development Corporation on land west of the present goods yard at Harlow. Total cost of the work, exclusive of land, will be in the region of £45,000.

Free Carriage of L.M.R. for Floods Relief.—The London Midland Region carried 42,339 packages by passenger train free of carriage charges to the relief organisations set up after the floods in East Anglia. The carriage charges on these consignments would have amounted to £9,434 5s. 9d. At the same time 7,811 packages, plus four wagons and 16 container loads, were conveyed free by goods train, representing £1,808 3s. in freight charges.

No Case Against Crossing Keeper Accused of Manslaughter.—Caernarvon magistrates have found no case for sending for trial the keeper of Pandy Lane crossing, near

Caernarvon, who as recorded in our April 17 issue was accused of manslaughter. The prosecution said that in a cabin adjoining the crossing were indicators showing the position of the trains and that the keeper had opened the gate for a lorry, which had barely reached the track when it was struck by a train from Bangor. The driver of the lorry was killed. The keeper was alleged to have said "Neglecting my work I was, talking and not looking." He told the Court that he thought a train which passed daily about that time had gone through when he opened the gates. For the defence it was maintained that this was a momentary aberration which did not amount to criminal negligence.

Skefko Ball Bearing Co. Ltd.—The trading profit for 1952 after transfer of £250,000 (the same as for the preceding year) to stock reserve, and deduction of £50,281 (£52,000) for provisions, was £1,943,641 (£1,513,012). The net profit is £353,597 (£317,161) and a dividend is proposed of 18½ per cent tax free, as for the preceding year.

Institute of Transport Informal Luncheon.—There was an attendance of nearly 100 at an informal luncheon held by the Institute of Transport at the Connaught Rooms, London, on April 28. Mr. John Elliot, Chairman of the Railway Executive, spoke of the work and progress achieved by British Railways, with special reference to the very heavy traffics of the current half-year.

Speed Limit Maintained for B.R.S. Vehicles.—British Road Services will not take advantage of recent High Court decisions to the effect that goods vehicles of 3 tons or less unladen weight are not subject to the speed limit of 30 m.p.h. when travelling light on unrestricted roads. Drivers are being informed that B.R.S. goods vehicles, whether loaded or empty, must not be driven at speeds exceeding 30 m.p.h.

English Electric Co. Ltd.—Preliminary figures issued after a meeting of the board of the English Electric Co. Ltd., show a group profit for the year, after all charges other than taxation, of £4,359,034, comparing with £3,642,141 in the previous year. After taxation, the figure is £1,449,518 as against £1,355,530, to which members of the English Electric Co. Ltd. last year contributed £1,383,057, an increase of £56,336.

Fuel Oil Tax Protest by Bus Operators.—Speaking on behalf of the major privately-owned bus undertakings, Mr. Peter Yorke, National Director of British Omnibus Companies Public Relations Committee

Indian Centenary Exhibition Stand



A model of a Jadotville-Tenke 50-cycle locomotive is the centrepiece on the stand of Les Ateliers Metallurgiques at the Indian Railways Centenary Exhibition in New Delhi

said on April 15 that bus and coach operators throughout the country were bitterly disappointed that the Chancellor had not taken something off the penal tax on fuel oil used in road passenger vehicles. The Chancellor's decision meant that operators would have to continue applying for increased fares. It was the earnest hope of operators that before the Budget was accepted by Parliament the Chancellor would have second thoughts about giving a concession. A plan whereby buses and coaches could get fuel oil duty-free could easily be put into operation.

Road Tunnel under Mont Blanc.—A conference of delegates from France, Italy and Switzerland to consider measures for the construction of the road tunnel under Mont Blanc was held in Paris between March 10 and 14. The draft of an agreement between France and Italy was drawn up and signed on March 14. Essential conditions for financing and carrying out work on the tunnel were also defined. Final details for beginning the work will be settled in a meeting to be held in Rome on May 4.

Scottish Region Donation to "Princess Victoria" Relief Fund.—On April 8 Mr. T. F. Cameron, Chief Regional Officer, Scottish Region, on behalf of the Scottish Region staff, handed to Provost W. Dyer, Stranraer, a cheque for £2,636 as a donation to the Princess Victoria Relief Fund. In handing over the cheque, Mr. Cameron said it was certain that Captain Ferguson and his crew gave to the full of their skill, courage and self sacrifice against the overwhelming conditions they faced. He felt it the greatest honour he had ever experienced in a fairly long railway career to be privileged to make this donation as a spontaneous tribute from the railwaymen and railway women of Scotland. In thanking Mr. Cameron, Provost Dyer expressed the gratitude of his committee for the cheque, the largest single contribution to the Relief Fund, which totalled £30,000.

Midland Railway Company of Western Australia Limited.—The report for the year ended June 30, 1952, shows that goods and livestock tonnage increased by 2,755 tons, or 1.26 per cent, and receipts from this source increased by £145,396 or 47.97 per cent. Passenger journeys decreased by 3,357 or 19.87 per cent, and receipts by £1,513 or 7.44 per cent. Receipts from the company's road service showed considerable increases but were more than absorbed by increased costs. The last increase in rates was granted in May, 1951. Since that date the basic wage rate has increased by more than 20 per cent. In accordance with the provision of the trust deed governing land sales receipts, £10,700 first mortgage debenture stock was purchased during the year, duly redeemed, and cancelled, leaving £35,611 stock outstanding at June 30, 1952. A meeting of holders of the second mortgage cumulative income debenture stock is to be held on July 16 to sanction the issue of a further £100,000 4½ per cent first debenture stock, should this become necessary. The directors state it is now necessary to provide the company with further money to enable long overdue renewals to be carried out. The supply position is now easing, and orders for materials amounting to £100,000 outstanding for several years are likely to be satisfied in the near future. Funds set aside for renewals have had to be used to meet essential capital expenditure. Particulars of receipts and expenditure were given in our April 3 issue.

Forthcoming Meetings

- May 4 (Mon.).—Historical Model Railway Society, at 32, Russell Road, London, W.14, at 7 p.m. Paper on "The Most Remarkable Railway in London," by Mr. H. F. Hilton.
- May 5 (Tue.).—Institution of Civil Engineers, at Great George Street, Westminster, S.W.1, at 5.30 p.m. Paper on "The Design and Equipment of Modern Mechanised Marshalling Yards," by Mr. R. E. Sadler.
- May 6 (Wed.).—Institute of Transport, Irish Section, at the Institution of Civil Engineers, Dublin. Paper on "Air Transport," by Mr. Stuart-Shaw.
- May 6-8 (Wed.-Fri.).—Institution of Locomotive Engineers. Summer Meeting in Lancashire.
- May 7 (Thu.).—Institution of Civil Engineers, at Great George Street, Westminster, S.W.1, at 5.30 p.m. Discussion on "Would the Strength Grading of Ordinary Portland Cement be a Contribution to Structural Economy?" Introductory Notes by Messrs. Edward Burke, L. J. Murdock, F. M. Lea and F. S. Snow.

- May 9 (Sat.).—Permanent Way Institution, Leeds & Bradford Section. Joint visit of Leeds & Bradford, Lancaster, Barrow & Carlisle, York, and Sheffield Sections to Shipton Castle and Woods.
- May 13 (Wed.).—Society of Chemical Industry, Corrosion Group, in the Chemical Society's Rooms, Burlington House, Piccadilly, London, W.1, at 6.30 p.m. Annual General Meeting, followed by Chairman's address entitled "Corrosion: a Field for Action."
- May 13 (Wed.).—Permanent Way Institution, Newcastle Section, in the Lecture Hall, District Engineer's Office, Forth Banks, Newcastle-upon-Tyne, at 6.30 p.m. Paper on "Unknown Railways," by Mr. R. Shepherd.
- May 16-21 (Sat.-Thu.).—Permanent Way Institution: Annual Summer Convention at Cardiff.
- May 16 (Sat.).—Stephenson Locomotive Society: Rail tour commencing from Derby Midland at 1.55 p.m.
- May 16 (Sat.).—Royal Engineers Association, at the Duke of York's Headquarters, Chelsea, S.W.3, at 6.30 p.m. for 7 p.m. London Sapper Reunion.

Railway Stock Market

Caution has again prevailed in stock markets, where sentiment reflected a tendency to await international developments, particularly news of progress at the Korean truce talks. British Funds were relatively steady, though recent gains in this section of markets were inclined to attract a little profit taking. Industrial shares have been unresponsive to a number of further dividend increases from important companies. The rather less conservative dividend policy which is now being followed has not come as a surprise. What has affected sentiment is the fact that profits record a sharp decline in some cases. The dividend payments still are conservative, but the market is wondering if the downward trend in profits will continue this year.

Foreign rails reflected the general uncertainty in stock markets, but were more active subsequently, when the somewhat lower prices tended to attract buyers.

White Pass & Yukon encountered selling and reacted to \$34½, while the convertible debentures were £119.

Canadian Pacific strengthened to \$48½, but the 4 per cent preference stock eased to 64½, though the 4 per cent debentures held firm at 81½.

United of Havana stocks reflected selling by recent speculative buyers who are disappointed that there is still no news of a takeover offer from Cuba. The 4 per cent "A" stock was 68, the 4 per cent "B" 58, the second income stock 24 and the consolidated stock 5½.

There was a little buying of Taltal Railway £5 shares on vague talk of takeover possibilities, but at 17s. 9d. best prices were not held. Nitrate Rails shares were 20s. 9d.

Antofagasta ordinary and preference have been steadier at 9 and 46½ respectively. Costa Rica ordinary stock remained fairly active, but at 13½ reflected profit taking, while the 6½ per cent second debentures changed hands around 60.

Nyasaland Railway 3½ per cent debentures were dealt in around 72½. In the Indian section Barsi Light marked 119.

There were again some dealings in old Russian railway bonds: Armavir-Touapse transferred up to 22s. 6d.

Chilean Northern first debentures were 25 and Guayaquil & Quito first bonds showed dealings up to 46½. Manila Railway "A" debentures were 84 and the preference shares 8s. 6d. Dorada ordinary stock was 55. Mexican Central "A" debentures were 69.

Among road transport shares the tendency was firm on the cut in oil prices. West Riding were 33s. 6d., Southdown 32s. 6d., and Lancashire Transport 47s. Ribblesdale marked 38s., Northern General 28s. 3d. and British Electric Traction stock showed firmness at £510 on higher dividend talk.

With engineering shares prices have eased again in accordance with the general tendency in industrials, sentiment in regard to which has been affected by the lower Imperial Chemical profits. Vickers were 46s. 9d. and Cammell Laird 12s. 6d., awaiting the full accounts and speeches at the annual meeting for any indication whether it is intended to buy back the important interests previously held by these two companies in the English Steel Corporation.

The market now is wondering, if it is intended to reacquire the English Steel holding, whether Vickers will have to raise more money. It is recognised that the terms offered for buying back denationalised steel assets will first have to be awaited. Guest Keen and John Brown are two other companies which in due course will have to make their decision on reacquiring freed steel assets.

John Brown at 43s. 7½d. and Guest Keen at 50s. 3d. were easier with the general trend this week, while Babcock & Wilcox, despite hopes of a higher dividend, lost a few pence at 72s. 6d. Tube Investments were 60s. 3d., Ruston & Hornsby 39s. 9d. and T. W. Ward 73s. 6d.

Among shares of locomotive builders and engineers, Vulcan Foundry receded to 21s. 6d. because of disappointment with the lower distribution. Beyer Peacock were 35s. 6d., North British Locomotive 15s. 3d., Gloucester Wagon 10s. shares 12s., and Charles Roberts 5s. shares 15s. 3d. Wagon Repairs 5s. shares were 12s. Central Wagon changed hands up to 68s. 6d. Hurst Nelson were 41s. 3d.